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# UR HOME PORTS

BY

SANFORD COLE

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# OUR HOME PORTS

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BY

SANFORD COLE

AUTHOR OF

"HANDBOOK TO THE MERCHANT SHIPPING ACTS," ETC.

WITH PLANS AND SKETCHES

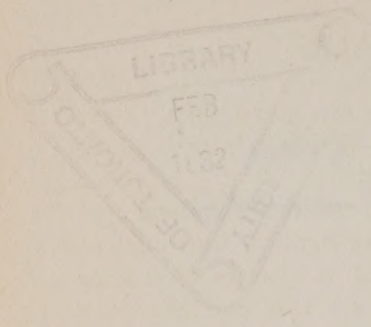
56167

LONDON

EFFINGHAM WILSON

16, COPTHALL AVENUE, E.C. 2

1923

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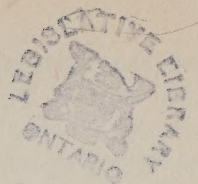

# PREFACE

IN sketching the story of our home ports I have set down impressions derived from a long familiarity with the activities of the principal shipping centres. These impressions, supplemented by the results of some investigation into current circumstances, first appeared as a series of articles published recently in *Lloyd's List and Shipping Gazette*. I have to acknowledge the courtesy of the editor of that journal in consenting to the present republication. The receipt of a number of inquiries as to whether the articles would be reissued in book form suggested that they were of more than passing interest. They have since been revised, and substantial additions have been made. Completed figures for the year 1922 have been inserted in the statistics, and the descriptions have been supplemented by a number of plans and sketches.

The development of the principal seaports of Great Britain is reviewed. After outlining the past, an account of present-day conditions in each port is given, not forgetting some mention of personalities. Character and extent of trade and transport facilities are discussed with particular reference to the effect of the Railways Act, 1921, on ports and docks, while some comparisons are also made. These comparisons have, in the opening and concluding

chapters more especially, been extended beyond our own shores. If, here and there, topics are handled without undue solemnity the purpose of the book is nevertheless serious. Information has been carefully and systematically collected and collated with a view to serving the requirements of business men, and also, it may be, of those interested in commercial education. I have not lacked for friends and correspondents, both official and non-official, in the various localities, and have availed myself of their aid. Indeed I am much indebted to this assistance. Acknowledgments have been made in some of the chapters, but I wish here to express thanks in general to others who have helped in the preparation of the book with information and useful suggestions.

LONDON,
*February*, 1923.

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# OUR HOME PORTS

## I.—INTRODUCTION

OUR home ports are a curious study. Each has its own peculiarities in physical conditions, history, character of trade, methods of business, and a dozen other features, while each local shipping community is quite unlike any other. Though differing in so many ways among themselves, the ports may be grouped in relation to certain broad currents of events. The story of their development is part of the social and economic history of this country. Indeed, they have, in more recent times especially, their place in world history.

The present account is merely a sketch, but the subject is of special interest in view of questions which arise as to the effect upon our ports of the statutory grouping of railways under the Railways Act of 1921. That, however, is one of the developments which must be assumed not to have taken place in making the effort of mind necessary to imagine the early conditions of sea trade. "The pre-requisites of our commerce," Walter Bagehot pointed out, "are of recent growth, and our ancestors even lately did not possess them. They are—large and ready capital, rapid and cheap land carriage, the

power of making great breakwaters to keep out storms, the power of making large docks to hold many vessels, the ability to protect and the confidence to amass great wealth close to the seashore. . . . But though in theory we know these things, yet they come upon us with a sudden completeness when we see the sort of place our ancestors thought a port. Boscastle is as good an example of their idea as can be found."

Having described the tiny, tortuous creek away in the west, in a break of the cliffs on the storm-swept Cornish coast, Bagehot added, in his whimsically humorous way : " I shall not ask at Lloyd's what is the rate for the Boscastle rocks, for I remember the grave rebuke I once got from a serious underwriter when I said some other such place was pretty. ' Pretty ! I should think it was,' he answered. ' Why, it is lined with our money !' "

However insignificant Boscastle may now appear, it must never be forgotten that the sea life and labour of those little western towns in Elizabeth's day, which Kingsley has helped us to realise, laid the foundation of England's supremacy in ocean commerce. We had seamen and ships and ports in earlier times, but with Elizabeth—during whose reign, be it noted, the commercial and financial importance of London vastly increased—came the great awakening which, in the century following, gave the lead in maritime business to this country.

We superseded the Dutch, who, in turn, had succeeded the Venetians. Indeed, for the very

beginnings of sea trade we must turn to the Mediterranean, on the shores of which there were many ports in days when Britain was almost beyond civilisation. The Phœnicians, as we know, traded from Tyre. The Greeks had harbours at the Piræus, close to Athens, and at Syracuse in Sicily, while on the Egyptian coast they built the great port of Alexandria. Only vessels of shallow draught could ascend the Tiber to the quays at Rome, but the Romans constructed a port at Ostia at the mouth of the river, and also a commercial harbour at Puteoli farther south. The importance of Carthage, the daughter city of Tyre, which Rome ultimately conquered, depended largely on sea trade.

### The Venetians

Not until long after the decline of Roman power, however, did Mediterranean commerce expand over Europe. The republic of Venice, that city state which established itself on the lagoon islands at the head of the Adriatic during the Crusades, had, at the beginning of the thirteenth century, obtained command of the trade route between Constantinople and Western Europe. Venice became a power whose commerce linked Europe with the Orient. England, which since the Norman Conquest had been brought more into communication with the Continent, came, by trade with Italy, into touch not only with "the gorgeous East," but with the influence of Roman civilisation preserved in Constantinople. Fleets of Venetian and Genoese galleys

regularly visited our coasts, frequenting Southampton and other Channel ports. Venice, triumphant in a long struggle with Genoa during the thirteenth and fourteenth centuries, became mistress of the Mediterranean and possessed of the tradè between East and West. But the capture of Constantinople by the Turks in 1453, wars between Venice and the Turks, the hostility of Europe to the Venetian monopoly of trade, and finally the discovery of the Cape route between Europe and the East in 1486, brought about ultimately the downfall of the republic, and the course of trade shifted from the Adriatic.

### The Dutch

While Venice still held the first place in European commerce, the ports on the North Sea and its adjacent waters were developing. The English Cinque Ports and the Hanseatic League of German port towns had become powerful confederations. It was the Dutch, however, who took the place of the Venetians. "They had become traders," wrote Admiral Mahan, "at the time that the Italian Republics, under the pressure of Turkish power and the discovery of the passage round the Cape of Good Hope, were beginning to decline, and they fell heirs to the great Italian trade of the Levant. Further favoured by their geographical position, intermediate between the Baltic, France, and the Mediterranean, and at the mouth of the German rivers, they quickly absorbed nearly all the carrying

trade of Europe. The wheat and naval stores of the Baltic, the trade of Spain with her colonies in the New World, the wines of France and the French coasting trade were, little more than two hundred years ago, transported in Dutch shipping. Much of the carrying trade of England, even, was then done in Dutch bottoms."

The Anglo-Dutch wars of the seventeenth century and the acquisition by England of possessions in distant lands—partly at the expense of France, which, in the seventeenth century, was a greater economic power than England—gave this country the maritime supremacy which, from the eighteenth century, remained in British hands to the outbreak of war in 1914.

With this general historical background in mind, we can, perhaps, look briefly at the earlier stages in the development of our ports before discussing separately some of the more important of them.

## Medieval British Ports

We have seen how the chief seats of sea trade shifted from the shores of the Mediterranean to those of the North Sea, and how, though the Dutch became the sea carriers of Europe before ourselves, we displaced them. Our attainment of a leading maritime position is usually attributed to the personal qualities of our seamen, and the importance of other factors is apt to be forgotten. In truth, the natural conditions of the country greatly assisted the developments which took place. The existence

of many natural ports helped the growth of shipping. The enterprise of our mariners, especially from the time of Elizabeth onwards, led to the foundation of colonies, and, as our commerce widened, our sea power became greater.

The deep water which modern ships require was not needed in the ports of early days. Shelter was sought, and a situation capable of being defended against attack, as at Dover, where, though the harbour was neither large nor deep, the adjoining heights were a natural defence, or at London, where the character of the river enabled a port to be established far enough inland to be secure against attack from the sea.

The Romans had stations on the south-eastern shores of Britain, but, according to the better opinion, the confederation of the Cinque Ports (though the ports stood on the same stretch of coast) was of later Teutonic origin. As already remarked, intercourse between England and the Continent increased greatly after the Norman Conquest, and these places were by medieval custom spoken of simply as "the ports." The Cinque Ports organisation defended our shores in general, and in particular the passage across the Channel, but at the beginning of the thirteenth century the chief commercial ports appear to have been London, Boston, Southampton, Lynn, and Newcastle.

### Influence of Legislation

The earlier developments were, as this enumeration indicates, mainly on the east and south coasts, which were nearest to the Hanse Towns, Holland, and Flanders. Coastal points on trade routes were naturally those at which ports were established, and the convergence of inland navigable waterways conduced (especially before we had effective means of land transport) to the growth of a port, but in studying the history of our shipping centres the influence of legislation upon the direction of trade routes must be taken into account.

From the earliest days of established government the whole of the coast was parcelled out into Customs districts, and for convenience in the collection of revenue the import and export of customable goods was restricted to particular places. Thus Edward I., in the thirteenth century, named certain ports, and forced the wool trade into particular channels, and the fourteenth-century "staple" legislation operated in the same way. Certain towns were appointed in which the merchants of the staple had a monopoly in the purchase and export of the principal raw commodities of the country. These regulations were varied from time to time, but the consolidating Ordinance of the Staples (1353) appointed towns at which the staple of wools, leather, woolfels (skins not stripped of wool), and lead should be held, and, where the

towns were inland, prescribed the ports to which the goods should be conveyed. The staple towns at this time were, in England, Newcastle-upon-Tyne, York, Lincoln, Norwich, Westminster, Canterbury, Chichester, Winchester, Exeter, and Bristol; in Wales, Carmarthen; and in Ireland, Dublin, Waterford, Cork, and Drogheda. From York goods were to go to Hull, from Lincoln to St. Botolph—that is, Boston—from Norwich to Great Yarmouth, from Westminster to London, from Canterbury to Sandwich, and from Winchester to Southampton.

### Growth of Trade

The indications of this list as to which were our principal shipping centres in the fourteenth century tally with what may be deduced from the list of ports that contributed ships and men to the great fleet collected for the Siege of Calais during the same period (1347), except that, in addition to most of the ports already named, Fowey, Dartmouth, and Plymouth stood high. The seaports of the West Country were coming to the fore, while the East Coast ports still maintained their trade. It is noteworthy that the Trinity Houses, all of early foundation, were established here—namely, at London, Hull, Newcastle, and Leith—in addition to a Trinity House of Dover. The London Trinity House was first incorporated by charter of Henry VIII. in 1514, and was entrusted by Elizabeth with powers of setting up beacons. It per-

STAPLE TOWNS AND PORTS IN 1353.

formed various duties to insure the greater safety of ships frequenting the coast and ports.

In contrast to the vigorous development which was characteristic of shipping in general at this time, the trade of Bristol, which throughout the Middle Ages had been the chief seaport of the west, was under a cloud. Its business improved later, and in the seventeenth and eighteenth centuries it rose to a great position.

With the more recent development of manufacturing industry in the north and the growth of great towns like Manchester and Leeds, Liverpool came to the fore, and the trade of the north-east coast ports increased. In the latter part of the eighteenth and the earlier years of the nineteenth century the improvement of the Clyde coincided with the expansion of the trade of Glasgow, while in South Wales industrial growth was accompanied by the development of the coal ports.

The great expansion of trade in more recent years has taken place since the repeal of the Navigation Laws, which for two hundred years operated against foreign ships. Since 1854 a foreign ship has been in the same position as a British ship in British trade.

So we approach our own time, in which the influence of the engineer has been, perhaps, the most prominent feature, as witness the improvements made in the navigation not only of the Clyde, but of the Tyne, the Tees, and other rivers and harbours, the building of great dock systems, and

the construction of the Ship Canal, which has made Manchester a seaport, to say nothing of the improvements made in land transport, which have been directly connected with the development of ports. The gradual disappearance in recent years of sailing ships, the greater size of steam and motor vessels, and the increased importance of dispatch have tended to concentrate trade in the larger ports, where the most modern improvements and facilities are to be found.

Among the causes which co-operate to influence events, however, are those which are less palpable than ship canals and docks. Shipowners and merchants are concerned with the relative cheapness of competing ports, and the general currents of financial business are factors as important as any. Some of these matters it may be possible to deal with in greater detail when we come to look at the ports one by one.

## Statistics

Before proceeding it will be useful to set out a few comparative statistics. The following figures relate to the foreign trade of certain foreign and British ports. The returns are for 1911, no comparative tables for later years having been issued by the Board of Trade. The foreign figures show in millions the net register tonnage of ships with cargoes and in ballast entered and cleared at each port. The British figures are similar returns of arrivals and departures.

| | Entd. | | Clrd. |
|---|---|---|---|
| Hamburg ... ... ... ... | 11.8 | ... | 11.9 |
| Rotterdam ... ... ... | 10.6 | ... | 10.6 |
| Antwerp ... ... ... ... | 13.2 | ... | 13.2 |
| Marseilles ... ... ... ... | 8.0 | ... | 8.1 |
| Genoa ... ... ... ... | 6.0 | ... | 5.9 |
| New York ... ... ... ... | 13.4 | ... | 13.3 |
| Buenos Ayres ... ... ... | 7.4 | ... | 6.2 |
| Hong Kong ... ... ... | 10.2 | ... | 10.2 |
| Shanghai ... ... ... ... | 4.1 | ... | 4.1 |

| | Arr. | | Dep. |
|---|---|---|---|
| London ... ... ... ... | 13.1 | ... | 11.1 |
| Liverpool ... ... ... ... | 11.3 | ... | 10.4 |
| Cardiff ... ... ... ... | 6.2 | ... | 8.7 |
| Newcastle ... ... ... ... | 7.4 | ... | 8.3 |
| Southampton ... ... ... | 5.3 | ... | 5.3 |
| Hull ... ... ... ... | 4.0 | ... | 3.6 |
| Glasgow ... ... ... ... | 3.2 | ... | 4.0 |

[NOTE.—For comparison with some foreign ports where the foreign trade comprises the greater part of the shipping (such, for instance, as the ports on the other side of the North Sea), coasting trade figures should properly be added to those showing the foreign trade of British ports, so as to represent the total shipping. Thus in London the coasting arrivals were 6.5 and departures 8.3, and at Newcastle the corresponding figures were 4.3 and 3.6. Some foreign ports, however, notably New York, have a large coasting trade (though the actual figures for New York's coasting trade were not officially published), and in such instances, of course, the two sets of figures relating to the foreign trade only of each port are fairly comparable with each other.]

British returns are available to a later date. The following is a continuation of the above table for 1913, 1920, 1921, and 1922, with some other British ports added :

| | 1913 | | 1920 | | 1921 | | 1922 | |
|---|---|---|---|---|---|---|---|---|
| | Arr. | Dep. | Arr. | Dep. | Arr. | Dep. | Arr. | Dep. |
| London ... | 13.7 | 11.4 | 11.7 | 9.8 | 13.4 | 11.1 | 14.4 | 11.4 |
| Liverpool | 12.0 | 11.2 | 9.2 | 8.7 | 9.8 | 9.1 | 11.2 | 10.5 |
| Cardiff ... | 7.6 | 10.4 | 4.4 | 6.7 | 3.9 | 5.5 | 6.9 | 8.9 |
| Newcastle | 7.2 | 8.4 | 4.5 | 5.6 | 3.8 | 4.8 | 7.2 | 8.1 |
| S'hampton | 6.7 | 6.6 | 3.8 | 3.7 | 4.4 | 4.4 | 6.7 | 6.6 |
| Hull ..... | 4.7 | 4.3 | 3.0 | 2.4 | 3.5 | 3.0 | 4.9 | 4.5 |
| Glasgow | 3.5 | 4.3 | 2.6 | 3.1 | 2.6 | 3.1 | 3.3 | 4.2 |
| Plymouth | 3.8 | 3.7 | 2.4 | 2.4 | 2.9 | 2.9 | 4.3 | 4.1 |
| Newport | 2.2 | 2.6 | 1.5 | 2.1 | 1.1 | 1.5 | 2.1 | 2.8 |
| Middlesbro' | 2.3 | 2.1 | 1.7 | 1.7 | 1.3 | 1.5 | 2.0 | 2.0 |
| Swansea | 2.1 | 2.7 | 1.3 | 1.9 | 1.2 | 1.6 | 2.2 | 2.7 |
| Manchester | 1.8 | 1.4 | 1.7 | 1.3 | 1.7 | 1.4 | 2.4 | 2.0 |
| Bristol..... | 1.5 | 1.1 | 1.4 | 1.3 | 1.5 | 1.4 | 1.9 | 1.7 |

Although no comparative foreign returns have been issued by the Board of Trade relating to the years since 1911, returns for New York may be found in the tables of "Foreign Commerce and Navigation of the United States," issued annually by the Department of Commerce at Washington. The following figures are interesting for comparison:

| | 1920 | | 1921 | |
|---|---|---|---|---|
| | Entd. | Clrd. | Entd. | Clrd. |
| New York ... | 17.4 | 15.0 | 16.6 | 15.3 |

[NOTE.—The real meaning of these figures showing net register tonnage of ships will be clear to those who are familiar with shipping business, but possibly not to others. To avoid confusion, some explanation of the different meanings attached to the word "tonnage" in different connections may be desirable. Ships are measured and their tonnages are officially registered in figures which represent space and

not weight. A space of 100 cubic feet is called a ton. Three figures are registered for each ship. These are (1) gross tonnage, which may be broadly defined as the total cubic contents, including closed-in deck erections, (2) under-deck tonnage, which represents the space below the "tonnage deck," and (3) net tonnage, which is arrived at by making deductions for space set apart for crew, machinery, and certain other purposes from gross tonnage.

None of the "register" tonnages referred to is a measure of carrying capacity. To explain this fully would involve entering into technical details, but it is not necessary to do this beyond mentioning that the machinery space deduction is an artificial figure which does not correspond to the cubic contents of the space itself. The figure which indicates carrying capacity is quite a different one—namely, dead-weight tonnage. This represents approximately the weight of cargo, stores, and bunker coals a ship can carry. It is not an official but a commercial figure. A deadweight ton is 35 cubic feet, as compared with 100 for the space ton of "register" tonnage.

The net register tonnage, though not giving the carrying capacity of an individual ship, may nevertheless be taken in bulk as a basis for comparing the trade of one port with that of another. That is to say, the total net tonnage of ships from abroad arriving and departing is a measure, for this comparative purpose, of the foreign trade of a port. The figures in the above tables therefore indicate approximately the relative extent of the foreign shipping business of the ports named. One reason why net tonnage figures appear in port statistics is that port dues and charges are ordinarily levied on net tonnage.

It will be seen, however, that totals of net tonnage are no guide to the weight or the value of the cargo carried. They do not tell one whether the ships were fully or partly laden or were not carrying cargo at all on the particular voyage. Apart from these statistics of the space tonnage of ships, comparisons are sometimes made between different ports on the basis either of weight or value of goods handled. Figures of all three kinds—tonnage of ships, weight of

goods, and value of goods—are quoted for various purposes in subsequent chapters, but it will be clear from the context which basis is being used. The question of weight as against money figures is discussed in the chapter on Manchester.

Finally, it should be pointed out that the tonnage figures above explained apply to trading ships and not warships. In connection with these last displacement tonnage is usually given. This is the actual weight in tons of the water displaced by the ship as it floats. As 35 cubic feet of water weigh one ton, displacement tonnage, like deadweight tonnage, represents 35 cubic feet to the ton, as against 100 feet to the ton when gross or net register tonnage is mentioned.]

# II.—LONDON

THE same scour of the tide and eastward drift of material in the English Channel which submerged some of the Cinque Ports and silted up others silted up also the channel which had made Thanet an island—the channel through which the Roman ships, guided past Dover by the pharos on the cliff, made their way into the Thames and reached London. The river and its channels have undergone many changes, but through the centuries the relation of the Thames to London has never changed. "The Thames, the river of London, is (as Sir Walter Besant expressed it) the sole cause and reason of the city's existence; without the Thames there would be no city." And this remains true. Indeed, the future of London is bound up with its prosperity as a port.

The position and prospects of the port of London are therefore of the greatest interest, and they concern not only Londoners but many others, for London is, as it has been from the beginning, the chief shipping and commercial centre of this country. Its importance is in large measure due to the fact that it is a market as well as a place of shipping, and for some commodities it is not merely a national but a world market. Its business relations are with the whole world. Its standing cannot, however,

properly be appreciated without a knowledge of the steps by which it has grown. No apology, therefore, is necessary for referring to its history, though to attempt anything like a summary of the history of the Port of London in this place would be a mistake. That history has recently been written—and well written—by Sir Joseph Broodbank. A wealth of material has been collected and published in two large and handsome volumes. There is, for the present, no more to be said. It will suffice to refer to a few outstanding events.

## THE PAST

### Early Traffic

That London was a place of shipping traffic in Roman times has already been indicated. In the Middle Ages its importance grew, partly because of its trade with the Hanse Towns, whose merchants had their own depôt for merchandise at the Steelyard, as it was called, in Thames Street. Besides European produce they brought Indian spices which had been carried overland through Russia, while Eastern products also reached the Thames—in increasing measure as time went on—in Venetian and Genoese vessels. To some extent corn, and to a great extent wool, were exported, the latter for manufacture in Flanders. Edward III.'s legislation prohibiting for a time the export of wool and the import of clothes, and encouraging Flemish weavers to settle in England, is described in Sir Joseph

Broodbank's History, which, however, omits to mention the important staple legislation of 1353, confining exports to certain ports (one of which was London), to which I have already referred when touching on the influence of legislation on the development of our ports.

### The Elizabethan Age

Besides the Staplers there was, from the time when the cloth industry began to flourish in England, another organised association known as the Merchant Adventurers. There were Merchant Adventurers in many English towns, but the most influential resided in London, which we find, owing to various happenings during the Elizabethan Age, greatly increasing its foreign trade. Flanders was overrun by the Spaniards. Antwerp ceased to be the chief commercial city of Europe, and many of its manufacturers and merchants came to London, where, besides the Merchant Adventurers, the Russia or Muscovy Company had been established before Elizabeth's time. During her reign charters were granted to various new companies established in London, among which were the Turkey or Levant Company, the Guinea Company, the Morocco Company, the Eastland Company, the Spanish Company, and, most important of all, the East India Company. At this time also, it will be recalled, Sir Thomas Gresham founded the Royal Exchange.

Under Elizabeth England and the Dutch

Republic were united in opposition to Spain, but the succeeding monarch made peace with the late enemy, and the seventeenth century was marked by bitter commercial rivalry and frequent conflicts between the English and the Dutch. The disaster of the Great Fire, which overtook London in 1666, destroyed practically the whole of the port accommodation. More than once Dutch warships invaded the river, but despite troublous times London was in 1700 doing 77 per cent. of the entire foreign trade of the Kingdom.

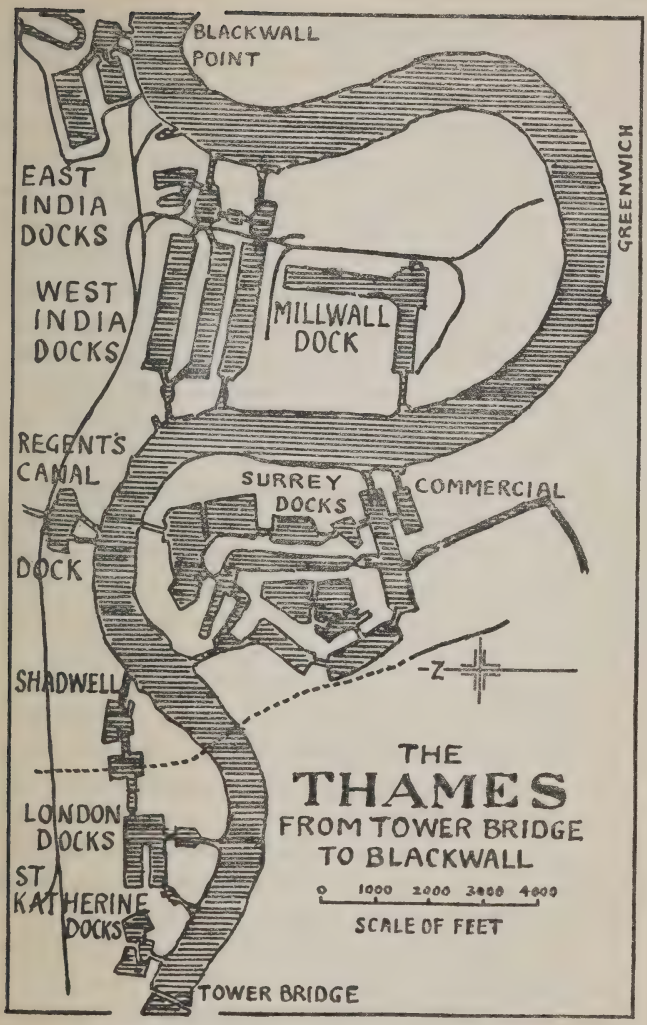
### Increasing Trade

During the eighteenth century, as already indicated, we superseded the Dutch as the world's sea carriers. Both the East Indian and the West Indian trade of London greatly increased, and the need for extending the port accommodation began to press. To prevent loss of Customs revenue by landings in obscure places, a statute of Elizabeth had enacted that goods should be laden or discharged only in the daylight and at quays legally assigned in each port. The "legal quays" in London were all on the north side of the river between London Bridge and the Tower. "The owners," Sir Joseph Broodbank remarks, "gradually became monopolists of the first order of merit, and the scandals which supervened upon the monopolies eventually led to action by Parliament, resulting in the dock system of London." The quay and warehouse accommodation had not been substantially extended since

these restrictions were imposed, and, with increasing trade during the eighteenth century, much delay and loss resulted from its inadequacy, despite an increase of facilities provided by the establishment of "sufferance wharves" on the south side of the river. The majority of vessels discharged and loaded into lighters, which conveyed goods to the quays, from which, after going through the Customs formalities, the goods were taken to warehouses. Many of the trades were seasonal, and great congestion and many abuses prevailed. Moreover, proper steps were not taken to maintain the depth of the river, which had to accommodate all the shipping, there being no dock then in existence, except the small Howland Dock, of about ten acres in extent, which had been constructed at the beginning of the century at Rotherhithe, and the even smaller Brunswick Dock at Blackwall.

### Dock Construction

The agitation for the reform of this very undesirable state of things led to the passing, in 1799, of the Act under which the West India Dock Company was formed and proceeded to construct the West India Docks. Thus began the period of dock construction which has continued ever since. In this short survey a mere list of names must suffice. There followed the making of the London Docks, the East India Docks, the Surrey Dock System, the St. Katharine Docks, the Victoria and Albert Docks (with their recent extension, the King




THE THAMES FROM TOWER BRIDGE TO BLACKWALL.

George V. Dock), the Millwall Dock, and Tilbury Docks, giving the London docks a water area of over seven hundred acres, surrounded by thirty miles of quays, in addition to the long lines of wharves and quays on both sides of the river.

Despite the relief given by the growth of the dock system, the increasing traffic on the Thames during the early part of the nineteenth century, the introduction of steam navigation, and the neglect by the Corporation of London of its duties as conservancy authority, led to the setting up of a body of conservators by the Thames Conservancy Act, 1857.

### The Port Authority

Many things happened in the next half-century, but for present purposes they must be compressed into a sentence. The Royal Commission whose report formed the basis of the Port of London Act, 1908, found that the Thames Conservancy, with restricted statutory powers, had failed adequately to maintain and improve the tidal river, that the Watermen's Company's monopoly of the navigation of lighters was detrimental in its effect, and that the dock companies (the number of which had been reduced by fusions) had been placed, by the gradual changes of a century, in an impossible position, and were unable to provide the extended facilities which were required.

After much discussion the various questions, including that of the "free water" clause in the Dock Acts, under which lighters entered the docks

without payment, were dealt with, as far as it proved possible to deal with them, by the Port of London Act, 1908, which created, in substitution for the existing bodies, the present Port of London Authority, which is a public trust on a representative basis. This became the sole administrative body, and was entrusted with the duty of improving transport facilities. The new Act, however, did not affect buoying, lighting, or pilotage, nor did it make any change in sanitary and police control, nor touch the ownership of the river wharves.

This sketch, dealing with so comprehensive a subject, is necessarily a very incomplete outline of the growth and character of London's sea trade and of the steps taken from time to time to provide facilities for that trade. In particular the nature and scope of the maritime business of London in more recent years remains for description. I shall attempt to deal with that and with some of the activities of the Port of London Authority in the remainder of this chapter.

## THE PRESENT

### Import Trade

I have already mentioned that in 1700 London was doing over three-fourths of the foreign trade of the kingdom. The value of the imports into London that year was under £5,000,000. In the last complete year before the late war the value

of imports into London had grown to nearly £254,000,000. They comprised wool, grain, timber, meat, and provisions of all kinds, including tea, coffee, sugar, fruit, wines, and spirits, as well as tobacco, rubber, tallow, paper, and many other kinds of goods.

Colonial wool has long been the most valuable of London's imports. For wool London has been the world market, but since the war the wool trade has been thrown quite out of its normal course. Difficult problems resulted from Government "control" and from the accumulation of huge stocks, to dispose of which the British Australian Wool Realisation Association (Bawra) was formed. "It experimented," remarks Professor Smith in his recently published book on "Organised Produce Markets," "with auction sales, in June, 1921, of Australian wool in Liverpool, Hull, and other centres." One result of the abnormal conditions has been this diversion of some of the imports of colonial wool to northern ports. Those places are naturally anxious to retain, and if possible to increase, the new traffic which has come to them, as an addition to existing business in foreign wool, but it remains to be seen whether the centralisation of dealings in the Metropolis will be seriously or permanently disturbed. Wool buying is a highly specialised business carried on by a comparatively small number of experts, to whom an international market, in which they can sample large supplies of bales in the warehouses, presents very definite advantages. The

question is open. Possibly the business will to a large extent remain in London, and if so the shipments to London will continue. The tendency in recent years, however, for an increased quantity of colonial wool to be disposed of by auction where it is produced may affect not only the course of trade, but also of transport.

Tea is another commodity to deal in which requires long and very special training. The disturbance of this trade by bureaucratic interference during the war had not very happy results, and it may be that London will continue to hold the trade. The London tea auctions and the established course of business, including the importing, sampling, and storage of tea in the London bonded warehouses have, so far, not been greatly influenced by efforts to divert the trade elsewhere. The subject is, however, further discussed in the chapter on Manchester.

In connection with the meat trade, cold storage accommodation is provided by the Port of London Authority for 1,500,000 carcases. This is mainly at the Victoria and Albert Docks, but there is also accommodation of this kind at the Surrey Commercial and West India Docks and at Smithfield. Butter and cheese are kept in cold cellars at the Victoria Dock.

### Exports

For eastern and colonial products such as those mentioned, London is likely to remain by far the

largest import centre and international mart. Its huge population and variety of manufactures give London the strongest hold on the import trade. As to exports, its position is not so good. Its manufactures, though considerable, are not so great as those of Lancashire and the north. Large quantities of goods are sent by rail from the north to London for shipment, but in foreign exports Liverpool stands, and in all probability will continue to stand, ahead of the Metropolis. In view of the disturbance following the war, an actual comparison of the export trade of the two places is difficult to make. In weight, exports from the United Kingdom as a whole were, in 1920, 19 per cent. less, and in 1921 63 per cent. less than in 1913. With such violent fluctuations prevailing, along with great variations in prices, any post-war comparison would have no more than passing interest. The 1913 values of foreign exports are, perhaps, still the most reliable basis of comparison. They were, from Liverpool, £195,000,000, and from London £158,000,000, but it is worth mentioning that, in the opinion of a sound authority, the inclusion of returns of coastwise shipments, if available, would have diminished or altogether done away with the difference. In comparison with any other British port than Liverpool, London has, of course, a very long lead.

Taking one after another of the various trades, one might go on at great length discussing the business of the Port of London, but there is a risk

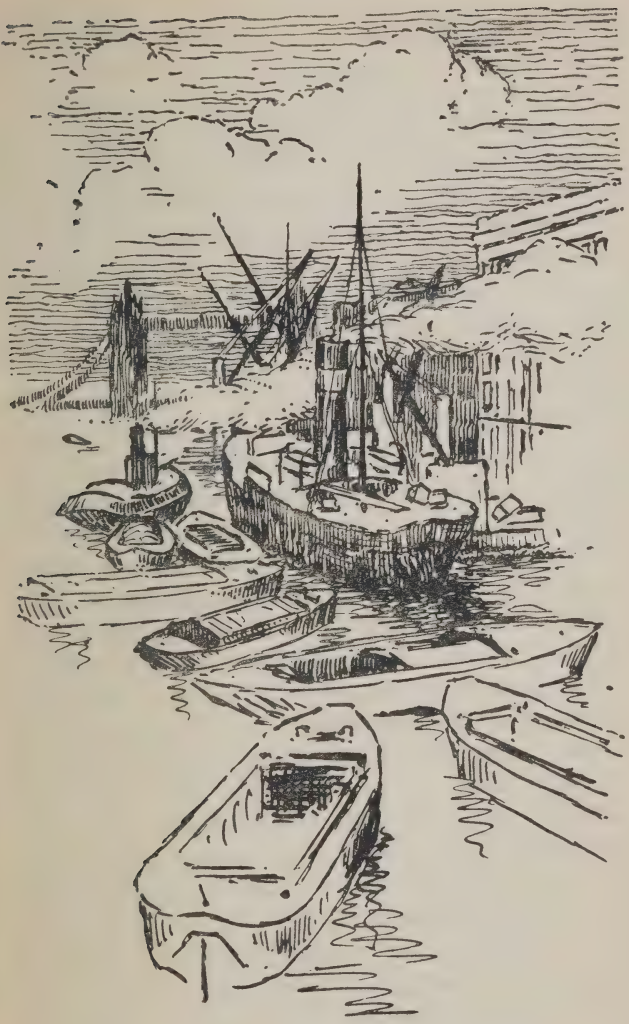
of losing one's way in masses of detail. Moreover, the present purpose is to give, if possible, a general view of the port as a whole, and it is evident that the extent and ramifications of the maritime business of London are so wide that detail must be limited. Details help to make a picture interesting, and the difficulty in dealing with London is that everything is on so large a scale. The Port Authority, it must be remembered, exercises jurisdiction over an area nearly seventy miles in length. The heart and centre of this district, from London Bridge down to Tilbury and Gravesend, comprises twenty-five miles of river, along and near the course of which are crowded wharves, docks, warehouses, and markets. Nearer the sea are the great oil depôts. Many of these places are hidden from view unless deliberately sought out and explored. Even when found, the activities of the various localities must be not merely seen but understood. Without study of geography and economics the connections between facts are not clear, and a realisation of their true inwardness is impossible, while every one of the numerous trades has its own features and peculiarities, to comprehend which special knowledge is necessary. Few people are in a position to grasp the breadth and meaning of it all.

### The Tidal Thames

The great liners from the ends of the earth frequent the docks, but one must not forget the

importance of the riverside. The trade there is the oldest established in the port. The docks were made because the original river could not, in the condition in which it then was, accommodate all the growing business, but the wharves and warehouses of the tidal waterway have developed as well as the docks system. In the last half-century especially there has been a great growth in the riverside accommodation. About 60 per cent. of the total tonnage of shipping entering the ports uses the docks, leaving 40 per cent. for the river.

By crossing London Bridge with one's eyes open it is easy to obtain a general idea of the busy doings on the river. Close to the water on each side of the Thames is a line of warehouses. Attached to their walls or standing in front of them are cranes that are constantly unloading or loading merchandise from or into steamers lying at their berths. "From Blackfriars to Shadwell," says Sir Joseph Broodbank, "the river is lined on both sides with public wharves and warehouses," and he adds that "they share with the dock warehouses about equally in giving storage to the enormous entrepôt trade of London." The dock warehouses of the Port Authority have room for a million tons of goods. Sir Joseph's estimate that the wharfingers' warehouses have equal storage room is possibly a low estimate, as another authority puts the figure at half as much again. The warehouses at Hay's Wharf, which is the largest undertaking of its kind, are equal in floor space to the St. Katharine's Dock



THE SOUTH SIDE BELOW LONDON BRIDGE.

warehouses. Hidden between some of the huge buildings at this wharf, which is on the south side of the Thames, just below London Bridge, is a dock to which many strangers were attracted not long ago when an unaccustomed visitor to the port—Shackleton's ship, the *Quest*—was berthed there. Normally this dock is crowded with lighters, and great quantities of provisions of all kinds are, with the aid of numerous cranes, rapidly handled, Tooley Street, at the back, being the provision market of London.

### Transport Facilities

Associated with the business of some of the wharf undertakings are river lighterage and road transport. All these facilities play their part in the extensive system of distribution which is ever at work. Fruit, butter, eggs, fish, and other commodities are dealt with expeditiously and in immense quantities day by day. At the wharves below Shadwell millions of tons of coal are annually discharged. For nine or ten miles altogether the line of river wharves is continuous, and farther down there are other wharves at intervals.

London has always been a barge-port, and lighterage has always been an important feature of the traffic. Goods are discharged overside into lighters not only in the river, but in the docks, and the Act of Parliament which established the Port Authority preserved the ancient right of lighters to pass into and out of the docks without payment.

Everywhere, both in the docks and the river, are these numerous barges and smaller craft attendant on the steamers.

The importance of the lighterage system which is in vogue in London is increased by the fact that some of the older docks—the London, St. Katharine, and Surrey Commercial Docks—are without railway facilities. Road motor transport developments have, to some extent, diminished the importance of this drawback, but it remains a serious defect. The other docks, the East and West India and Millwall group, the Victoria and Albert and the Tilbury Docks, are, of course, in communication with the railway system of the country. The port suffers, however, from the absence of adequate means of crossing the tidal river in the lower reaches.

Canal communications should not be passed without mention. The Grand Junction Canal connects London and the Thames with the midland system of canals in both the Birmingham and Nottingham districts. The canal joins the Thames at Brentford, and also, by means of a branch to Paddington, connects with the Regent's Canal and the dock belonging to the Regent's Canal Company on the Thames at Limehouse.

### Ship Repairing

Though many famous ships have in the past been built on the Thames, this industry is now relatively unimportant. It has gone to the north. Only barges and a few small craft are now launched

on the Thames. There are, however, a considerable number of dry docks (ranging up to 500 feet) and repairing yards up and down the river. The Port Authority also has dry docks in connection with its Millwall, Surrey, Royal Albert, King George V. and Tilbury docks. The largest is the dry dock entered from the King George V. Dock, which is 750 feet in length.

### Port Improvement

One of the duties laid upon the Port of London Authority by the statute which created it was to improve the state of the river and the accommodation and facilities of the port. Accordingly, since the Authority was established, it has set about this business. It has nearly completed the deepening of the river, by means of dredging, to 30 feet at low water right up to the Royal Albert Docks, that is, to within ten miles below London Bridge. The depth at high water, therefore, is 50 feet. These figures should, however, be regarded, for purposes of actual navigation, as approximate only. A pilot would no doubt rightly consider some allowance necessary for irregularities. Above the point mentioned dredging has also been proceeding right up to London Bridge, where the minimum depth will be 14 feet at low water. The new two-story jetty, 1,000 feet long, with railway connections, at Tilbury, is another of the principal river improvements. This was formally opened by Lord Devonport, the Chairman of the Port Authority, in June,

1921, and the berthing accommodation which it provides is now very seldom unoccupied.

In the docks, numberless deepenings and widenings, new quays, additional sheds, cranes, warehouses and other improvements have been the work of the Authority, besides the construction of the new King George V. Dock, with all its up-to-date appurtenances. Expenditure by the new Authority already amounts to between ten and eleven millions.

Other works which are to be proceeded with include the floating passenger landing stage, to be constructed adjoining the Midland Railway Station at Tilbury, improvements in the West India and Millwall Docks, and numerous other developments. Large further extensions at the Royal Albert and Tilbury Docks are also contemplated by the Port Authority, which, since October, 1922, has been in occupation of the large new building erected on Tower Hill to serve as its headquarters. Here the work of its various administrative departments is concentrated.

Although so much has been and is being done, it is possible, in the extensive area of the port, to point to places where improvements that have not found a place in the programme of the Authority are, nevertheless, badly needed. The Surrey Commercial Docks, for instance, the business of which is timber, are antiquated, and the trade is suffering from the absence of railway facilities and other difficulties. There would be no physical difficulty

here, as there is at the London and the St. Katharine Docks, in connecting up the docks with the railways. Complete remodelling and modernizing of the Surrey Docks is called for, and here, moreover, the Authority does not appear to have been successful in its administration.

### Good Dispatch

Though there is thus room for much further improvement, and though, in relation to other parts of the port also, shipowners sometimes complain of slow dispatch, it is clear from recent instances that very quick dispatch can be given. The case of the steamer *Castilian,* 5,440 tons deadweight, of the Westcott and Laurance Line, was an example of exceedingly good discharge. The vessel arrived on a Tuesday from Alexandria with a full cargo (general and cottonseed), berthed in the Millwall Dock, and had completely and satisfactorily finished discharge by noon on the following Saturday, although delayed by rain for part of one day. The owners, at all events, were well pleased with the work of the stevedores, considering this a splendid turn round for a steamer at London and, in fact, a record discharge for this class of cargo.

Another recent instance was the *Canadian Cruiser,* the flagship of the Canadian Government Merchant Marine Fleet, which berthed in the King George V. Dock and discharged 8,000 tons of cargo in four and a half working days. This was a remarkably quick dispatch, testifying to the ex-

cellence of the facilities available at the newest dock of the Port of London Authority.

It is necessary to remember, in considering any question of dispatch, and in making comparisons, that much depends on the character of the cargo. If it is all for one consignee, and no sorting is required, the cargo can be discharged and delivered more rapidly than where—as is often the case in London—different parcels of goods have to be sorted out.

### What of the Future?

There is no reason, in a broad view, to doubt the strength of London's position for the present. The idea that trade is forsaking London in favour of Continental and other ports has long been a favourite theme in some quarters. The investigations of the Royal Commision, pursuant to whose Report the present Port Authority was brought into existence, helped to discredit this theory. Administration under the Port of London Authority is undoubtedly a distinct improvement on the state of things which prevailed when the Authority was established in 1908. During the war, London suffered more than ports on the west coast in volume of traffic, and, in common with other British ports, its business (when examined on sounder grounds than money figures which no longer have the same relation as before to bulk or weight of goods) is still below the level attained in pre-war years. London stands, however, as it has

always stood, far ahead of other home ports. Such changes as have occurred have not altered relative positions. If the standing of London is imperilled, it is not, it would seem, by the competition of provincial ports, but by possible results from the disturbance of the currents of world trade caused by the war. Those consequences have, however, possibly not yet fully manifested themselves.

# III.—SOUTHAMPTON

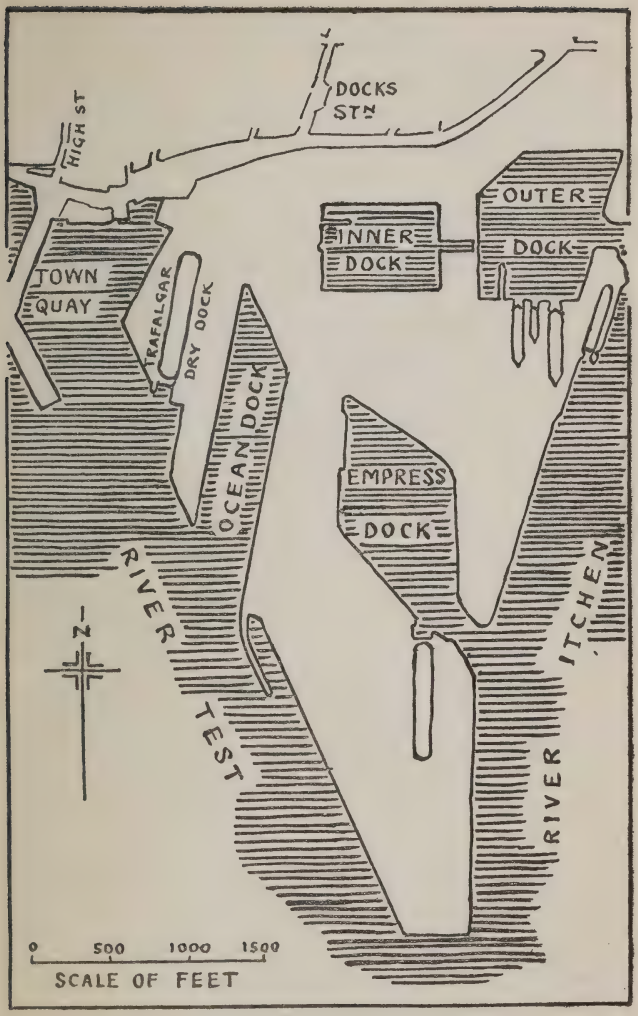
RECENT developments at Southampton, resulting in the further diversion of passenger traffic from Liverpool, mark the continuing progress of the second period of great prosperity through which the southern port has passed. The place has thus had a curious history. From very early times till the sixteenth century it stood high among English ports. Then the tide of business seemed to ebb. Until within the last hundred years the currents of affairs flowed elsewhere than at Southampton, but the tide turned again and has risen steadily.

The situation invites shipping—a wide tongue of land projecting southward between the Rivers Itchen and Test, and narrowing to a point below which the two streams merge into Southampton Water—there could scarcely be a better place for harbourage, whether for medieval or modern vessels. In old times a position retired somewhat from the coast was preferred for safety from sea attack, so the head of Southampton Water, a broad tidal deep connecting with the sea channels between the mainland and the Isle of Wight, almost necessarily became a port.

### Earlier Prosperity

All through the years during which the English kings had great possessions in France, Southampton flourished. As already noted, it ranked third among our ports at the beginning of the thirteenth century. It imported wine and sent away wool. Winchester, it will be recalled, was the staple town from which goods were sent to Southampton to be reweighed before leaving the country. The fourteenth century "wool house," formerly called the "weigh house," stands yet, just within the line of the old Southampton town walls. The port, besides being frequented by ships from various parts of Europe, was the recognised centre for the Italian trade, and for a hundred and fifty years the Venetian galleys traded here regularly with precious merchandise from the East, till the discovery by the Portuguese of the passage to India by the Cape of Good Hope brought a change. In Elizabeth's time, too, the Levant Company was established in London, and Southampton lost trade to the Thames. Its business fell away, and, with Bristol, the port declined in that age which elsewhere was one of great expansion.

"It is not a little interesting," remarked Woodward, "to contrast the decline of Southampton owing to the discovery of the passage round the Cape with its modern prosperity through the establishment of the overland route . . . to Southampton has fallen the carrying trade of old Genoa




SOUTHAMPTON DOCKS.

and Venice." Those words, however, were penned in the sixties, when the P. and O. Company used the port regularly. Much trade with the East Indies is still maintained, and there have, of course, been many additions since, as we shall see.

### The Modern Revival

Between the Elizabethan and the Victorian Ages Southampton Water—despite its natural advantages, including the convenience of double high water—was little used for commerce. Portsmouth, where dredging was requisite, came into prominence as a naval dockyard during the Dutch Wars, but Portsmouth, though close by, has a separate story, with which we are not concerned at the moment. An Act of 1803 established a harbour board at Southampton, a dock company began building docks in 1838, and the railway from London was opened in 1840. Those were the beginnings of revival for the port.

An outline of the rest of the story may be given first of all in the form of a statement showing the dates of dock openings and other port improvements, and of the advent of the principal shipping lines :

1842.—Outer Dock.
1847.—New York Steam Service.
1851.—Inner Dock—Royal Mail Line.
1856.—Predecessors of Union Castle Line.
1857.—North German Lloyd Line.
1858.—Hamburg-Amerika Line.

1870.—Nederland Steamship Line.
1873.—Rotterdam Lloyd Line.
1890.—Empress Dock.
1892.—L. and S.W.R. Company took over docks.
1893.—American Line.
1893-6.—Approach channel deepened to 30 feet, low water.
1895.—Itchen Quays. Prince of Wales Dry Dock.
1898.—Test Quay extension.
1906.—Trafalgar Dry Dock.
1907.—White Star Line. Red Star Line.
1907-9.—Channel further deepened to 32 feet.
1910-13.—Channel further deepened to 35 feet.
1911.—White Star (now Ocean) Dock.
1918.—Cunard Line.
1922.—Canadian Pacific Line.

### Passenger Traffic

The tendency of passenger traffic to centre more and more at Southampton is due in large measure to the situation of the port in the English Channel. The lines which serve Europe as well as England can conveniently combine calls at Southampton and Continental ports. In this respect the more southern English port has a great advantage over Liverpool. Southampton, with its frequent sailings across the Atlantic to and from Canadian, United States, and South American ports, and to and from South Africa and the East, in addition to its cross-Channel services, is beyond question the premier passenger port. Before the war the American Line and the principal White Star sailings were transferred here from Liverpool, and these have been followed since

by the Cunard and the Canadian Pacific. The dredging and the constructive work of recent years have been directed towards strengthening the position Southampton holds by virtue of its geographical situation and natural advantages. The largest vessels can now enter and leave at any time, and lie during their stay in tidal docks and at wharves where a depth of water adequate to their requirements is maintained. Southampton, it is interesting to note in passing, resembles Glasgow and differs from most other ports in that its docks are not closed in by lock gates. On the land side the railway connections are, of course, excellent, the best trains reaching London from Southampton in a little over an hour and a half. All the quays are provided with railway lines.

The grouping of railways under the Act of 1921, it may be remarked in passing, by associating the London and South-Western Railway in the Southern Group with the South-Eastern, Chatham, and Brighton Companies, brings most of the cross-Channel ports within the ambit of the interests of this group.

### Cargo Business

The merchandise handled at Southampton is valuable in character, but the importance of the cargo business cannot compare with that of the passenger traffic. Unlike London and some of the great shipping centres of the north, Southampton is not to any large extent a market; nor is

it a manufacturing district. The goods pass through in transit—that is all. Neither coal nor iron is found in the neighbourhood, and the factors which might enable the place to develop into an industrial centre, importing materials and exporting manufactured goods, are lacking. Nevertheless, it is a point of interest that there are favourable sites for factories, and during the last few years the introduction of oil import and storage—and, at Fawley, refining—has brought within reach a supply of power which may increase possibilities in the direction of the establishment of manufactures.

The imports are, for the most part, foodstuffs of various kinds, including many fruit cargoes. Meat is discharged into cold store, and thence into road vans, which are conveyed loaded to London and elsewhere by train, so that on arrival they can proceed direct to the markets without the meat being rehandled. Exports are machinery, hardware, and manufactured goods.

### Bunkering and Repairs

The primary purpose of the oil depôts already incidentally mentioned is, of course, to supply the requirements of oil-burning steamers, so many of the large liners, as well as other vessels, having been converted to oil burning. Bunkering facilities, whether oil or coal, are ample, the coal coming from South Wales by coaster or by train and being stored in lighters.

Repairing facilities include, besides the Trafalgar and Prince of Wales Dry Dock, four other smaller dry docks. The two named are among the largest at British ports, the Trafalgar Dock having accommodated the German-built *Imperator* (renamed the *Berengaria*), though, it is true, with no room to spare. The dock has, however, since been extended by 15 feet. In order to provide for the *Majestic* (ex-*Bismarck*) and the *Leviathan* (ex-*Vaterland*), the London and South-Western Railway Company is having constructed by Messrs. Armstrong, Whitworth and Company a floating dock, so that when this is ready Southampton will be able to undertake the repair of the two largest vessels in the world.

### Port Administration

Although Southampton Docks, which comprise the major part of the shipping accommodation at the port, are the property of the London and South-Western Railway Company, there is, in addition, the Town Quay, which belongs to the Harbour Board. The Board, moreover, is the authority exercising jurisdiction over the whole port, including the approach channel. Until reconstituted in 1913 the Southampton Harbour Board was not very happily adapted to its responsibilities. It consisted of the local Town Council, with ten added ratepayers who were importers or exporters—in other words, it was a municipal authority. The constitution of the Board was inquired into by Board of

Trade Commissioners in 1912, and by a local Act of 1913 it was reconstituted on a representative basis, so as to include nominees of Government departments (the Board of Trade appointing a representative of labour interests), of local municipal bodies, and of the railway company, in addition to a number of elected members representing the local Chamber of Commerce, owners of foreign-going and coasting vessels, traders, and waterside frontagers.

The accommodation available at Southampton for shipping is fully occupied, and the question of increasing the facilities has necessarily demanded consideration. For some time the railway company had in view the possibility of developments opposite Southampton on the eastern side of the Itchen, at Woolston, where it acquired a considerable extent of land. This scheme has, however, been put aside in favour of proposals for utilising the wide foreshore on the Test estuary northward of the Town Quay. These proposals have lately taken definite shape, and, having met with local approval, may probably be the subject of an application for Parliamentary powers. It is proposed to reclaim some six or seven hundred acres of mudland adjoining the line of the old town walls along the shore of the Test, between the Town Quay and Southampton West Railway Station. Upon this site, should the scheme be carried out—a process which must occupy several years—will be constructed a series of piers and dry docks, behind which will be an

area available for commercial and residential purposes, and also for a public park. Like the existing docks, the extended accommodation would be in direct communication with the railway, and the scheme promises to enhance, in a material degree, the standing of Southampton as a leading port.

### The South Coast

One would fain linger for a while on this South Coast. The Cinque Ports are full of enticing memories. Poole, where the deepening of the great land-locked harbour is in contemplation, also has a long and interesting history. So has Weymouth. Lyme Regis cannot be passed without a word, though the Cobb now shelters only an occasional pleasure steamer. Nor should we do justice to Exeter were the fact overlooked that here, in Elizabeth's day, was made the first ship canal, a waterway which still connects the city with the estuary of the Exe. At Dartmouth we go back to Chaucer and beyond, for the port was already famous in his day. "For aught I woot," he wrote, in describing the shipman, "he was of Dertemouthe." Then Plymouth, Falmouth, and a host of other places call us to stay, but none of all these ranks in present commercial importance with Southampton. For the time, at least, we pass them, round Land's End, round Hartland Point, and . . . But Bideford detains us. Who can forget Kingsley's admirable picture, still a true one? "All who have travelled through the delicious scenery of North Devon must

needs know the little white town of Bideford, which slopes upwards from its broad tide-river paved with yellow sands, and many-arched old bridge . . . " and so on. Bideford, too, we leave, and take our way along the shore of the Severn Sea.

# IV.—BRISTOL

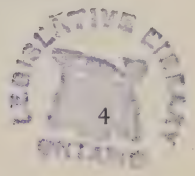
THERE is a legend of a Bristol ship which, being too late for a favourable wind, lay in the Avon for a year before attempting again to put to sea. No doubt the tale is apocryphal, but it is intensely real. The atmosphere of the historic city and port of Bristol is lethargic. The place has delightful surroundings. The inhabitants are charming people among themselves. There is much amassed wealth, but the activities which make the money productive are mostly in progress elsewhere. Business moves in set channels. Bristolians look askance at newcomers. Until the third generation they are unwelcome strangers. The contrast between Bristol and other shipping centres is marked. There is nothing cosmopolitan about the outlook in Bristol. Broad views are not held.

## A Storied Past

The greatness of the port of Bristol lies mostly in the past. It owed its origin to early trade with the Scandinavian voyagers who had settled in Ireland. By the twelfth century it was already a famous town, having a haven at Kingroad, where the Bristol Avon joins the Severn estuary, some seven miles below Bristol itself. In the Middle Ages it was the chief seaport in the West of

England. William Canynges and other great merchants made its name famous. One may read in Hakluyt of voyages from Kingroad, but during Elizabeth's time the commerce of the place was at a low ebb, and the great seamen of that age came not from Bristol, but from Devon. In the seventeenth century, however, there was a steady growth of new traffic with the regions opened up by the Elizabethan navigators. Trading with America, the Mediterranean, and Africa, Bristol became one of the chief seaports of the world. There was great business on the Severn Sea in the eighteenth century to and from Bristol, but over it drew the shadow of eclipse. During the war with the American colonists the port lost its trade, not only with North America, but also with Africa. The public conscience was awakened to the horrors of the slave trade, in which the townsfolk were largely interested, and in all directions the foreign shipping of the place faded away.

In more recent times the sea traffic of the Severn estuary has flowed more to the South Wales ports than to Bristol. With the advent of steam and the growth of manufacturing industry in Lancashire and the north the former western port gave place to Liverpool, and, though still possessing a considerable and varied import trade, it cannot compare in vigour of commercial life with other centres.



## Dock Construction

In the old days ships which wound their way up the Avon to Bristol lay aground in the harbour at low water. The Severn estuary and the rivers

THE BRISTOL AVON.

flowing into it, one must remember, have an exceptionally great rise and fall of tide, owing to the narrowing of the upper part of the Severn. At the mouth of the Wye the rise is occasionally 60 feet. The difference between high and low water at the point where the Bristol Avon enters the Severn is

sometimes as much as 50 feet. Referring to Clevedon, a mile or two farther down, the author of "In Memoriam" wrote:

> There twice a day the Severn fills;
> The salt sea-water passes by,
> And hushes half the babbling Wye,
> And makes a silence in the hills.

At low water mudbanks are much in evidence, both in the Severn and its tributary streams. Early in the nineteenth century the question of a dock system at Bristol was seriously faced. A new cut was made parallel to part of the river, and the harbour within the town was dockised, a great undertaking for those days.

For a few years there was progress. In 1838 that great engineering triumph, the wooden steamship *Great Western,* crossed from Bristol, where she had been built, to New York. The *Great Britain* was also launched here, her completion in 1843 marking the establishment of the era of iron shipbuilding. The promise of these historic events, however, was not fulfilled, and Transatlantic trade went elsewhere.

The company which had converted a section of the old tidal river at Bristol into a floating harbour levied heavy charges, and trade increased very little. In 1848 the Municipal Corporation acquired the dock concern and reduced the dues, but the difficulties of the Avon hampered the development of business. The seven miles of narrow winding channel (particularly the Horseshoe Bend), navig-

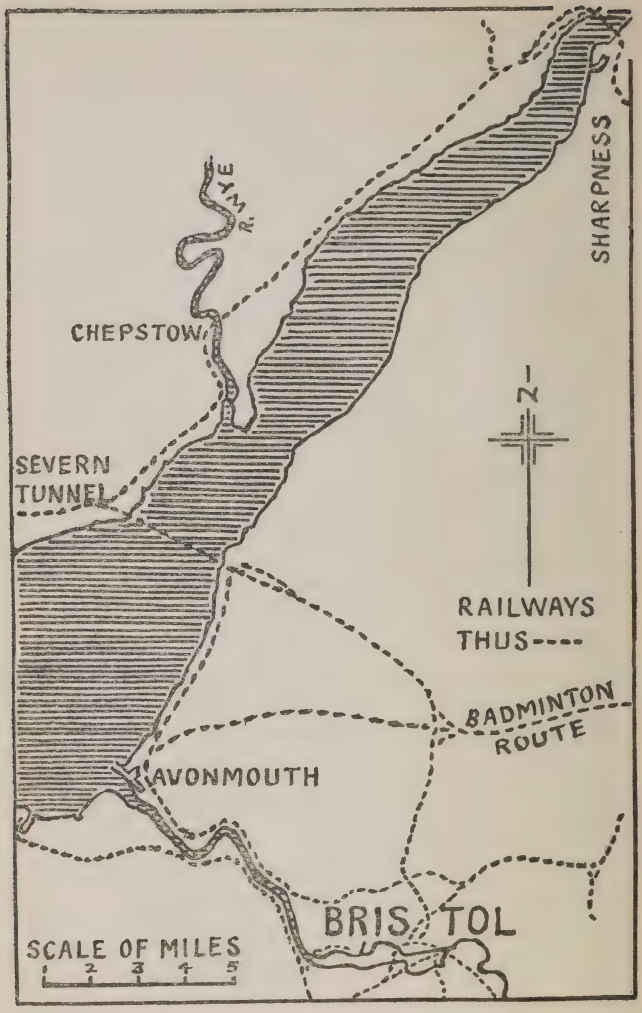
able for only an hour or two on each tide, was then, as now, a drawback. In 1852 a fine ship named the *Demerara,* which had been built at Bristol, stranded in the river. The old figurehead of this ship, a bold and striking piece, may be seen still, fixed to a house-front in the centre of the city.

It was clear that something ought to be done, but nothing was done, though the question of dockising the whole river, or constructing docks at its mouth, was discussed at tedious length. The years and the opportunities passed. As the Corporation did nothing, the half-measure of making a dock at the river's mouth was eventually carried through by private effort. Avonmouth Dock was opened in 1877. During its construction local opponents obtained Parliamentary powers for a rival dock on the opposite side at Portishead, which was opened in 1879. Competition between old and new docks ensued, and eventually the Corporation had to buy up both the river-mouth concerns. Schemes for dockising the whole river—a step which might, till a late period, have saved the situation—were discussed and reported on from time to time, only to be shelved. In 1902 the construction was begun of an additional dock and entrance at Avonmouth. This was opened by the King in 1908, and named the Royal Edward Dock. Its area is 30 acres, that of the original Avonmouth Dock is 19, Portishead 12, and the old Floating Harbour at Bristol 65 acres.

### Railway Connections

Meanwhile the railway facilities in connection with the various docks at Bristol, which had been very indifferent, were improved, but in relation to through traffic the railway developments of recent years have not been to the advantage of Bristol. The completion of the new Great Western line through the Badminton country left Bristol off the direct route between London and South Wales, and since the construction of other connecting links the direct Great Western service from London to Plymouth also avoids Bristol, leaving the original main line, on which Bristol is situated, at Reading, and rejoining it at Taunton.

The railway lines serving the river-mouth docks at Bristol connect with both the Great Western and Midland systems, and those at the old City Docks with the Great Western. Both the Great Western and the North-Western and Midland groups of railways constituted under the Act of 1921 are therefore interested in the traffic of the port, though neither group owns any dock here. The docks are entirely the property of the City Corporation, and their maintenance involves a continuing loss, which is made good out of the pockets of the local rate-payers. The Great Western, as we shall note later, has become possessed of the range of docks on the Welsh side of the Channel, which in some respects compete with Bristol for shipping business.




THE SEVERN ESTUARY.

### Present Conditions

The trade of the port, as already remarked, is mainly import, foodstuffs of various kinds being the principal commodities. Part of these supply the half-million of population at close range, while the remainder has been and is distributed over a considerable area, including South Wales. For the large industrial population there, however, direct imports have begun to develop, and the closer association between railways and docks along the Welsh seaboard may bring about an accentuation of this tendency. Meanwhile Bristol imports from abroad grain, provisions, fruit, timber, tobacco, and mineral oil. Coasters and Irish traders account for a considerable number of the arrivals and sailings.

The grain trade facilities and accommodation at Avonmouth include elevators, barges, conveyers, and silo granary accommodation, while there are granaries also alongside Portishead Dock and the old City Docks. Cold stores are located at Avonmouth and also in Bristol itself. Fruit imports include apples, currants, oranges, lemons, onions, peas, potatoes, and bananas, these last coming from the West Indies and Central America in large and increasing quantities. Timber cargoes are mostly dealt with at Portishead, but there is storage room also at Avonmouth, and timber wharves appropriated to the use of particular firms occupy part of the frontage at the City Docks. For the tobacco trade there are three large bonded warehouses near

the City Docks. The tobacco is American, but some of it reaches Bristol coastwise. The oil depôts are at the river-mouth docks, and are connected by pipe lines with berths for discharging and for bunkering. There are also facilities for taking oil to vessels for bunkering by means of tank craft. These river-mouth docks have not had the benefit of good communication with Bristol, but the isolation of Avonmouth will be somewhat less when a new road which is in course of construction has been completed.

A dry dock, of a total length of 875 feet, is situated alongside the entrance lock of the Royal Edward Dock at Avonmouth, and there are dry docks also at the City Docks. The largest is the Albion, associated with the yard of Messrs. Charles Hill and Sons, Ltd., who carry on some shipbuilding, and also own and manage a regular line of cargo steamers to and from the United States ports.

For some seventy years the ownership and management of the Port of Bristol has been in the hands of the local municipal authority, and the events of that period cannot be said to afford evidence of the suitability of a municipal body to watch over and advance the interests of a port. The experience of Southampton pointed to the same conclusion. In that case, as we have seen, a new Harbour Board has been set up comparatively recently, constituted on a widely representative basis. On the Mersey, the Clyde, and in other instances municipal control long ago gave place to

management by public trusts, and the advantages which have accrued to the ports where this change has been made are beyond question. With a broader outlook and more vigour in administration the case of Bristol would be less difficult, but, even assuming these things, the question would remain of the financial burden to be taken over.

### Sharpness and Birmingham

Above Bristol the navigation of the Severn for ships of any size is difficult. The deep channel—deep only at high tide—is liable to shift, and pilotage is essential. The dock at Sharpness, 13 acres in extent, forms the entrance to the Port of Gloucester, which, though now only of secondary rank, has been a place of maritime importance for many long years. A curious petition presented by Bristol against the establishment by Queen Elizabeth of a Custom House at Gloucester set forth, among other allegations, that "Irishe men with their barkes have found a directe trade to Gloucester, and all to shippe away corn, and soe we lose the benefit of their comodyties and the utteringe of our owne, another great decaie to us."

The ship canal from Sharpness Dock to Gloucester was made nearly a hundred years ago, owing to the navigation of the Severn between these two places being both circuitous and dangerous—possible, indeed, only for very small craft. The canal, in its full length of sixteen miles, has no locks, nor do any bridges limit headway. It is

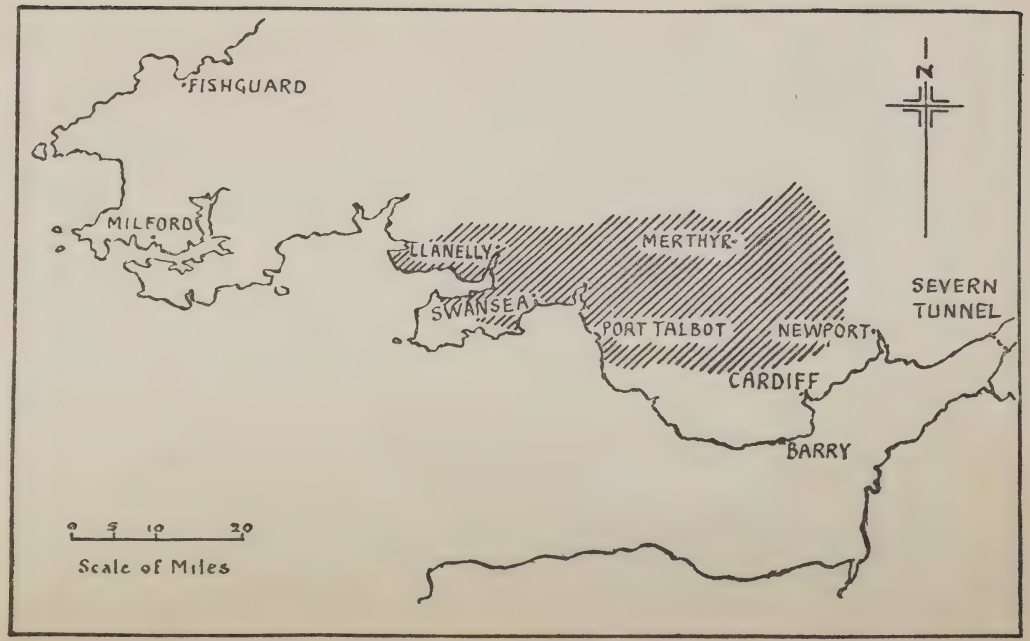
available for vessels drawing from 13 to 16 feet up to 230 feet long and 33 feet beam, and leads on past Gloucester to the upper part of the Severn, which is under the control of the Severn Navigation Commission, and can be used by sailing "trows" up to Worcester, from which place there are connections by canal to Birmingham and also to Wolverhampton. This route between the Severn and Birmingham was regarded by the Royal Commission on Canals, which reported finally in 1909, as one of those worthy of special improvement with a view to its becoming a trunk line of inland water communication, but more recent events have rather put that possibility into the background.

# V.—CARDIFF

THE South Wales ports are like beads upon a string. The Great Western train, as it threads its way westward, after emerging from the Severn Tunnel, links them together. Newport, Cardiff, Port Talbot, Briton Ferry, Neath, Swansea, and Llanelly are passed in succession. The railway keeps within easy reach of the coast, except for some distance beyond Cardiff, where the shore bends away southward, but, approaching Port Talbot, the sandhills show that the sea is again not far away. A passing glimpse opens to view the wide sweep of Swansea Bay, and, leaving behind the brown hinterland of Swansea, where industry, with the resultant fumes, forbids the green, the train traverses the low-lying shore again past Llanelly towards Fishguard.

Away among the hills, northward of this coast bordered by the Severn Sea, are the mines. Through tunnels and down valleys a network of railways carries the coal for shipment. Before looking at the ports it will be desirable to note a few facts about the coalfield, on the development of which the business of the ports depends. Before doing either, however, passing reference should perhaps be made to the great change which has recently been brought about under the Railways Act of 1921.

Hitherto the railways and the docks associated




SOUTH WALES COALFIELD.

with them have not formed part of the Great Western system. They have been separately owned. That has been changed by the Act, under which the coal-carrying lines of South Wales and the docks at Newport, Cardiff (including Penarth and Barry), and Port Talbot have been amalgamated with the Great Western in the Western Group of railways. Swansea was not brought in by the Act, but a provisional arrangement has since been arrived at under which that port also will pass into the same railway hands. After this digression we can return to the subject of coal.

### The Coal Industry

This mineral is, of course, the backbone of our export trade. The Mersey, the Clyde, the Forth, and the north-east coast from Blyth and the Tyne down to the Humber are engaged, besides the Severn, in the shipment of it. Historically one should begin with the Tyne, because the northern field was the first to become of commercial importance, but it will be more convenient to deal first with the development of South Wales, from which is now exported more coal than from any other district. The coalfield itself — approximately a thousand square miles in extent—is indeed, with the exception of the Clyde area, the largest in the country.

The coal industry here is the growth of not much more than a hundred years. During the second half of the eighteenth century South Wales produced not principally coal, but iron. The local

coal was used in the smelting of iron. The manufactured product, with a little surplus coal, was carried down for shipment on the backs of mules and ponies. Cardiff and Swansea had been places of sea trade for centuries, but had not attained to any great size. The traffic of other places on the coast was insignificant. Indeed, during the eighteenth century conditions were not conducive to extensive trade. Desperate "ruffins" carried on smuggling, and any ship so unfortunate as to be wrecked on shore was habitually broken up and plundered by the country people. But changes came with industrial development. Canals were made and a few small docks were constructed. Works for copper smelting increased round Swansea. Tinplates were manufactured. The iron industry grew throughout the whole area, and then colliery developments, the building of numerous railways and docks, and the growth of the export of coal gave South Wales its place in world trade.

### Export Business

In round millions of tons the coal output of South Wales, compared with that of the whole of the United Kingdom, has been as follows:

| | S. Wales. | U.K. | | S. Wales. | U.K. |
|---|---|---|---|---|---|
| 1850 | — | 56 | 1890 | 29 | 181 |
| 1860 | 10 | 80 | 1900 | 39 | 225 |
| 1870 | 13 | 110 | 1910 | 48 | 264 |
| 1880 | 21 | 146 | 1913 | 56 | 287 |

During the war quantities diminished and have continued reduced. Up to 1913 the output of South

Wales grew, it will be seen, from one-eighth to one-fifth of the total, but a further point to note is the increasing proportion of total output exported. Attention was called to this by the late Lord Rhondda (then Mr. D. A. Thomas) in a paper prepared in 1903 for the Royal Statistical Society. Whereas the proportion exported in 1850 was less than 7 per cent. of output, it had increased by 1900 to nearly 26 per cent. A year or two later the proportion exceeded 30 per cent., and it remained at about one-third of the total during the years preceding the war. Three-fifths of the export coal of Great Britain is shipped from South Wales ports, and the growth in the trade of these ports indicated by the figures quoted will therefore be seen to be very great indeed.

Since the war not only has output diminished, but the proportion of the reduced total which has been exported has been smaller.

The greater part of the coal exported from South Wales is for use in steam navigation. As to this "steam coal" (the chief sources of which are South Wales and the Newcastle district), Professor Hull remarks, speaking of South Wales: "It is well known that the coal-seams undergo a remarkable change in their extension from the east towards the west. While in the former direction they are bituminous, or gaseous, upon reaching the centre of the area the same coal-seams become semi-bituminous, or 'steam coals,' and further west gradually pass into anthracite."

Having premised this much, the ports claim attention. They have a good many features in common, and it will be sufficient in this and the succeeding chapter to deal particularly with Cardiff, Swansea, and Port Talbot.

### Premier Coal Port

Cardiff is the premier port in the world for the shipment of coal. Yet from "Cardiff Records," published by the City Corporation, we learn that in 1782, only 140 years ago, the local collector of Customs reported that "we have no coals exported from this port, nor ever shall, as it would be too expensive to bring it down here from the internal part of the country." That official prophecy has been strangely falsified. Here are the returns of coal and coke exports from the docks within this same Customs Port of Cardiff during recent years. In millions of tons they are as follows :

| | Bute. | Barry. | Penarth. | Total. |
|---|---|---|---|---|
| 1890 ... ... | 7.4 | 3.2 | 1.5 | 12.1 |
| 1895 ... ... | 7.5 | 5.0 | 2.5 | 13.0 |
| 1900 ... ... | 7.5 | 7.2 | 3.2 | 17.9 |
| 1905 ... ... | 7.3 | 8.6 | 3.7 | 19.6 |
| 1910 ... ... | 9.5 | 9.7 | 4.0 | 23.2 |
| 1913 ... ... | 10.6 | 11.0 | 4.5 | 26.1 |
| 1915 ... ... | 8.9 | 9.7 | 3.1 | 21.7 |
| 1919 ... ... | 6.5 | 7.8 | 2.6 | 16.9 |
| 1920 ... ... | 5.2 | 6.9 | 2.5 | 14.6 |
| 1921 (strike) | 3.9 | 5.7 | 1.6 | 10.2 |
| 1922 ... ... | 7.1 | 9.8 | 3.0 | 19.9 |

No doubt that former collector of Customs had in his mind the export of coal from the Tyne, then a well-established trade with London and other places. He knew, perhaps, how directly the North Country pits were in touch with shipping, that the distances were short, and that the nature of the ground to be covered lent itself to the construction of waggon ways along which horses could haul the coal. He could not foresee that the Welsh hills would be tunnelled, that in the valleys cuttings would be blasted through the solid rock, and that even rivers would be diverted to make way for railroads and steam locomotives to bring down the coal. And, by a strange perversity, he selected for his prophecy the place which was to stand ahead of all others in the business he declared could never be done at all.

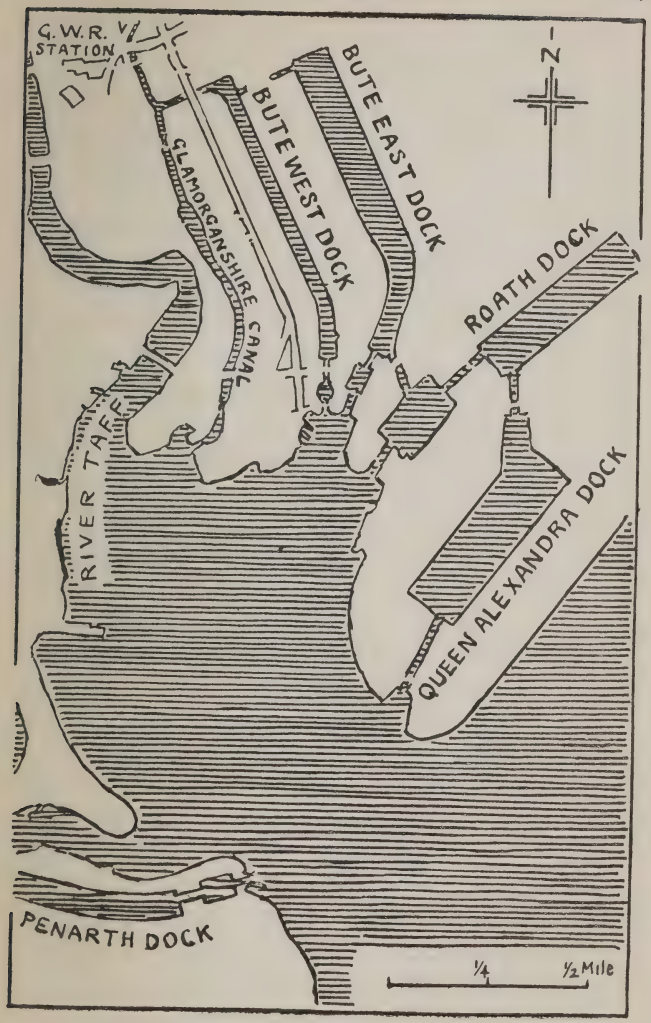
Neighbouring ports have their share of mineral exports, but Cardiff maintains without question its position as the centre of the South Wales coal trade. Moreover, the business is done here. Even if the shipment is from another port, the parties mostly meet and make their bargains on 'Change at Cardiff. The crowded floor of the Cardiff Coal Exchange represents cosmopolitan interests worldwide in their range and variety.

### Docks and Railways

Though the Glamorganshire Canal, originally constructed for the carriage of iron, and opened in 1798, brought down some coal in the early days, the present development of Cardiff dates from the build-

ing of the West Bute Dock, which was completed in 1839, and of the Taff Vale Railway, which was opened in 1841, having been laid out by the great engineer Brunel. The construction of the West Bute Dock was due to the foresight of John, second Marquis of Bute, who put £350,000 of his money into it. The Bute Trustees completed the East Bute Dock twenty years later. Under an Act of 1886 the Bute Docks were vested in the Bute Docks Company. The opening of the other Bute Docks followed, the Roath Docks in 1887, and the Queen Alexandra (52 acres) in 1907. For the policy worked out in the development of the Bute Estates the late Lord Merthyr (Sir William Thomas Lewis), who was for many years General Manager of the Bute Docks, collieries, and other properties, was mainly responsible. A man of great ability, with a consummate knowledge of all the factors bearing on the affairs with which he was concerned, Lord Merthyr was long a dominating figure in the industrial and commercial life of South Wales.

Penarth Dock (associated with the Taff Vale Railway Company) dates from 1865, and the opening of Barry—a more recent memory—was in 1889. Altogether the dock area in the Port of Cardiff exceeds 300 acres—Bute Docks 165 acres, Penarth 26, and Barry 114. The figure is an index to size, for in South Wales the rise and fall of the tide is so great that wharves alongside tidal water are, with the exception of a few berths in the Usk at Newport, scarcely used.



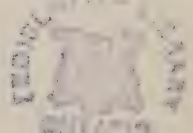

BUTE DOCKS AND PENARTH DOCK, CARDIFF.

Concurrently with the construction of docks went on the development of railways. The Taff Vale has already been mentioned. The South Wales Railway Company, which built what is now the main line of the Great Western Railway through Newport and Cardiff to Milford, was formed in 1845. A number of lines were opened in the valleys, including the Rhymney Railway, which was incorporated in 1854. The Barry Railway was built in conjunction with the competitive docks opened at Barry in 1889. In the late nineties the Bute Docks Company obtained Parliamentary powers under which they constructed an additional line for bringing down coal, and changed the name of the undertaking to the Cardiff Railway Company.

The foregoing are some of the principal dates relating to the construction of docks at Cardiff and of railways carrying coal to that port. During the period covered similar developments were in progress in other parts of South Wales, some of which will be referred to more in detail later. For the moment it will be sufficient to mention, in passing, that east of Cardiff trade was growing at Newport, while westward Swansea (interested in the metal trades as well as in coal) was also increasing. In 1885 the Rhondda and Swansea Bay Railway, connecting the Rhondda Valley with Port Talbot and Swansea, was opened, while in the nineties further new lines connecting Port Talbot with colliery districts adjacent were opened, and that port, with a new dock, entered on a period of rapid growth.

## Cardiff Coal

Thus the whole of South Wales was being opened up for the purpose of the coal industry and the export trade. Cardiff was at the heart of things. As the business of the port increased the figures representing import and general trade naturally showed some expansion, but those figures continued small in comparison with the statistics of the coal trade. Substantially the business of Cardiff has been, and is, the export of coal. On that and associated industries the place depends. Because of that Cardiff has attained to its present great importance. In shipping circles the commercial capital of Wales stands for coal, but, strange as the statement may sound, Welshmen have had little share in developing the port. The city and the docks are twin entities, and, whatever may be the story of the city, that of the Cardiff Docks is a record of the vigour of those who came from the north, where the coal industry was of earlier development. The seaward parts of Devon contributed some members—the Corys came from Bideford—but in the main the community of whose energy the Port of Cardiff is the expression were North Countrymen. John Nixon, the pioneer of the South Wales coal industry, came from County Durham. When the Taff Vale Railway was opened the drivers of the first locomotives (eight in number) all came from Newcastle-on-Tyne. The local shipping community, too, was mostly of northern origin. The first locally owned steamer to



enter the port was built on the Tyne. She was the *Llandaff*, and arrived in 1865. Many northern names are still prominent among Cardiff docksmen, and, although the breeziness of the northern manner tends to be lost, it has not yet entirely disappeared.

## Port Development

The conditions prevailing in the older Cardiff were different indeed from those of to-day. Here is a vivid picture of the place as it presented itself about the middle of last century to the eyes of my friend the late Commander George Cawley, R.D., R.N.R. Speaking in 1895, he said: "It is now over forty years since, as an apprentice to the calling of a seaman, I entered the then only dock of Cardiff on a ship. The East Bute Dock was at that time a chain of excavations in course of formation into the dock of that name. I had already viewed with youthful wonder the forest of masts of vessels in the dock for a week or more from the Roads (where we were lying awaiting our turn for admission to load), but when it came to docking my surprise was increased at the narrowness of the gut-way leading to the dock, and the apparent impossibility of entering or moving whilst in it. Cardiff of that day apparently knew no rest day nor night. The continuous shriek of the locomotives shunting trucks, the noise of falling coals, the ring of railway iron, the intermittent thud of coal waggons, combined with the never ceasing crowds of seamen of

every nationality passing to and fro from their vessels, their weirdlike chanties sung while shifting their ships in the dock, the piles of ballast here and there, and the stacks of railway iron awaiting shipment, together with the business-like hurry of the inhabitants, created a strong and lasting impression on my mind that Cardiff was a thriving place, and that it had a great future before it."

Ships still enter Cardiff by the "drain," but the notorious Cefn-y-Wrack Shoal, which formerly obstructed the entrance to the port, has long been removed, and much other dredging has been done. Moreover, since the completion of the Queen Alexandra Dock in 1907 there has been an additional entrance to the Bute Docks available through the great sea lock from the open channel, and, by intercommunication passages, any of the Bute Docks except the West can thus be reached. Penarth Dock is also entered direct from the Channel, and Barry, of course, has its deep-sea entrance. The aspect of Cardiff has entirely altered with the enormous changes in marine traffic, the extension of railway working, and the erection of coaling cranes and coal hoists giving rapid dispatch. Small two-story houses in the streets adjoining the docks have given place to great blocks of offices, and everything wears a new aspect.

In bringing about the transformation which has taken place at Cardiff, railways have played a part second only in importance to docks, and in the administration of railway affairs no personality has

left a deeper mark on South Wales than Mr. Ammon Beasley, who from 1891 to 1917 was General Manager of the Taff Vale Railway. Assuming that position in most difficult circumstances, Mr. Beasley, by his grasp of what was needed and firmness in pursuing his policy, brought the Taff Vale Company into a very strong position. In addition to his railway work he was for a number of years Chairman of the Bristol Channel Dock-owners' Association, and took considerable interest in shipping questions. My recollections of meeting him on various occasions are pleasurable—one could not but admire his skill in handling a subject and the strength of character which he showed. Mr. Beasley's relinquishment of more active duties was on account of advancing years. On ceasing to be General Manager he became a director of the Taff Vale Company, and was Deputy-Chairman of the Board at the time of the recent amalgamation with the Great Western.

### Imports and Industries

Shipbuilding has never been carried on to any great extent at Cardiff, but, as is well known, dry-docking and repairing facilities are very extensive, and, apart from the staple business of coal, there is an import trade, not only in pit-wood for the mines, but also in other kinds of timber, in grain, and in iron ore. The iron and steel industry is an old one at Cardiff, and there are large works adjoining the docks.

A summary table of imports and exports for the Port of Cardiff will serve to convey a general idea of the conditions of recent years :

| | Exports (Tons) | Imports (Tons and Loads) |
|---|---|---|
| 1890 ... | 12,560,606 ... | 1,566,399 |
| 1895 ... | 15,608,481 ... | 1,894,284 |
| 1900 ... | 18,697,241 ... | 2,476,839 |
| 1905 ... | 20,482,021 ... | 2,713,513 |
| 1910 ... | 24,017,611 ... | 2,668,321 |
| 1913 ... | 27,213,060 ... | 2,860,708 |
| 1915 ... | 22,586,784 ... | 2,565,888 |
| 1920 ... | 15,577,669 ... | 2,211,552 |
| 1921 ... | 11,631,867 (strike) | 1,331,617 |
| 1922 ... | 20,540,688 ... | 2,035,901 |

The dense population of South Wales necessarily requires large food supplies. Curiously, these have come mostly by rail from London, Liverpool, and Bristol, but, in recent years especially, steps have been taken with a view to increasing direct imports, and, difficult though it is to change an established current of trade, these efforts seem to be telling. Within a thirty-mile radius of Cardiff there is a population of 2,000,000, and cargoes of potatoes, fruit, vegetables, and other provisions have in recent years been a notable feature in the trade of the port. There is considerable cold storage accommodation both at the docks and in the town. The milling trade has grown of late years, and paper-making is also carried on. Undoubtedly Cardiff has tended, and may tend more as time goes on, to become a centre for the import of materials for manufacturing purposes, but for the present coal continues to be by far its most important business.

### Railway Grouping

Further reference to the South Wales coal trade will be made after the development of Swansea and Port Talbot has been discussed in the next chapter, but before leaving Cardiff mention should be made of the fact that, following upon the recent amalgamation of the South Wales dock and railway undertakings with the Great Western Railway, Mr. J. H. Vickery was, in April, 1922, appointed Chief Docks Manager, with headquarters at Bute Docks, Cardiff. In order to co-ordinate working arrangements, a central office has been opened in Mount Stuart Square, Cardiff, in direct telephonic communication with the docks at Newport, Penarth, Barry, and Port Talbot, so as to afford greater facilities to traders for inquiries, orders, and information generally. All orders connected with the shipment of coal and for the requisition of loading or discharging berths at the docks named are accordingly now dealt with at this central office. In a similar way the traffic organisation of the Cardiff docks has been centralised at a coal shipping office at the Cardiff pierhead.

The "constituent companies" which, under the Railways Act, have become amalgamated with the Great Western Railway in the Western Group are the Barry Railway, the Cambrian Railway, the Cardiff Railway, the Rhymney Railway, the Taff Vale Railway and the Alexandra (Newport and South Wales) Docks and Railway. In addition, numerous "subsidiary companies" also come in,

the more important including the Rhondda and Swansea Bay, the Port Talbot, the Neath and Brecon, the Brecon and Merthyr, and the Penarth.

Whether any real benefit to trade will result from the transfer of all the South Wales railway and dock undertakings to one company remains to be seen. There are doubts as to this, and on the Great Western Railway Company rests the burden of showing that some advantage has followed or will follow from the change. Those who are familiar with the conditions in South Wales know that the reason why freighters moved in the eighties and constructed the Barry railway and docks was because in everyday business they had felt the need for a competitive outlet for coal at Cardiff. Before the recent railway amalgamation took place the various docks and the railways associated with them were (except, of course, during the war period) in active competition with each other for business, and a trader, if unable to obtain facilities in one quarter, might obtain what he wanted in another. Now all the transport and shipping facilities are in one hand, and unless organisation is thoroughly good and the administration of affairs is conducted so that all the requirements of business are fully and promptly satisfied, there may be reason to regret that the change has been made.

If in the state of things prevailing before the transfer coal was to be exported from, say, the Rhondda Valley, it might have been brought down either to Barry, Penarth, or Bute Docks, or to

Newport. The railway with which arrangements had to be made was different in each of the four cases. The trader had, so to speak, four strings to his bow, with possibly a fifth by utilising Port Talbot, and a business man knows the advantage of being in that position.

The railway company's answer to these points may be that its policy certainly is to provide complete facilities for the traffic, so that the requirements of the coal trade at all points will be fully met. The company has, in fact, set about the improvement of the docks equipment at Cardiff. Its large resources, of course, place it in a stronger position than any smaller concern in relation to matters of this kind. Moreover, it has co-ordinated the working of the traffic in bringing down and shipping coal. In former conditions there was apt to be congestion at the exchange junctions where traffic was handed over by one company to another. At those points the arrangements are now under one control, and the same remark applies to the haulage of the waggons from storage sidings to the tips at the docks.

As a result of the amalgamation, the "pit to port" principle, as it was often called (that is, single control of railway and dock), has now come into more complete operation. This system was worked at Penarth (where the dock was leased to the Taff Vale Railway Company) and at Port Talbot. At Barry the same company owned the docks and the railways leading to it, but other rail-

ways linked most of the collieries with the exchange junctions at which the Barry Company took over the traffic. The theory that the "pit to port" principle was the best is now certainly more fully put to the test of practice than before, but the unification of control brings not only the lines serving each dock, but all the lines serving all the docks, into one ownership and under one management. All competition between different places of shipment is thereby eliminated, but the change is so recent and has been made while conditions are still so far from anything like normal that more experience than has yet been possible of the effect of the alterations will be required before the consequences can be judged with any degree of assurance.

For the same reason the question whether some other difficulties which existed in the past may be mitigated under the altered conditions cannot yet be fully answered. Although the fact was not officially recognised—was, it should perhaps be said, denied—certain interests were more or less in a preferential position at certain docks in obtaining tips. As South Wales had gradually developed, various influences which had been at work had established restrictive and other conditions governing the course of business. Some of these have necessarily gone into the melting pot as the result of the railway amalgamation, and there may, in some respects, be a freer field under common working. Everybody may be placed more on a level, but it would be a

mistake to attach too much importance to this aspect of things.

It must, of course, be remembered that possibilities of competition have not quite disappeared, as the North-Western and Midland Group has direct access to Swansea and also retains certain rights over routes to Cardiff, but, broadly speaking, the Western Group controls the working of the railway and dock facilities throughout South Wales.

A comparison with the north-east coast is not altogether in point. The North-Eastern Railway Company's monopoly, which has long existed in that district, has, it is sometimes argued, not proved detrimental, but in that instance the railway has not had control of all the loading places.

### Future Questions

In addition to the questions of everyday working there is the question of future development. The grouping system makes one huge concern responsible for seeing that the needs, and, it may be, the growing needs of the whole of South Wales are adequately met by the facilities provided. In present conditions, and perhaps for some time to come, there may be no necessity for increased shipping accommodation in this district, but should the trade require that it would be very doubtful whether any proposal originating independently of the Western Group of railways could be put forward with any prospect of materialising. In other words, the whole responsibility for the future, and for

wisely anticipating the trend of events, has been given to the Western Group, while the spur of possible competition has been practically eliminated. A position of trust has been created. An experiment is being tried. There is at least a risk of undesirable results, but there are also possibilities of favourable consequences, and until the issue resolves itself there is no need for pessimism.

In conclusion it may be suggested that one possible step (following upon unification of control of railway traffic) which may, perhaps, be worth taking would be to adjust the movement of shipping so that vessels might be diverted to another dock if the dock at which they were proposing to load should be congested. It has sometimes happened that ships have been crowding into one dock when berths could readily have been obtained elsewhere had charters allowed of variations in the place of loading. This, as will readily be seen, is a question for shipowners and charterers to deal with, and perhaps the centralisation of dock management in railway hands may allow of the making of some alteration of chartering conditions which would in times of congestion facilitate dispatch.

# VI.—SWANSEA

TO look towards Swansea from aboard a ship in the Bay is an inspiration, but to travel to the port by train induces a horrible feeling that you are approaching the infernal regions. 'Tis worse than Sheffield. Sheffield is black, but these bare hill-sides up the Swansea Valley look scorched. Yet it should not surprise one to find fumes prevailing in the neighbourhood of "the metallurgical centre of the world." They smelt copper, they make pig iron, they make steel, they make spelter and tinplates round about Swansea. Incidentally, they make the vegetation cease to grow and cause the stranger who is coming into their midst to start with alarm. But out in the Bay the wind blows freshly, the sun perchance is bright, the ships from the ends of the earth pass in and out, and a haunting whisper that the world is wide and full of promise shapes itself in the murmur of the sea.

In sober earnest, however, one cannot but be impressed by both contrast and variety here. The great curving line of the shore from Mumbles Head to Scar Point, backed by hills, is so different from the industrial district behind those same hills. Yet the industries find employment for the ships. Swansea Docks export coal, but their business includes much besides that. As to the coal itself, there is variety, for both "steam" and anthracite are

shipped in large quantities. Patent fuel, too, is manufactured extensively at works adjoining the docks, and is loaded direct into the ships' holds. There is the recent great development of the oil business and much else of importance to note.

The industries of the Swansea district provide both inward and outward cargoes—imports of various materials and exports of manufactured products—so that, with the addition of coal shipments, the sea trade of the place is always active. Nevertheless, the port has, owing to a combination of adverse circumstances, to which reference will presently be made, been passing through a critical period. The difficulties are receding, however, and conditions have not only improved, but promise exceedingly well for the future. It will be interesting to trace the outlines of the position more in detail.

### Trade of the Port

Here are figures showing the total tonnage (dead-weight) of imports and exports over a period of years :

| | Imports | Exports | Total |
|---|---|---|---|
| 1870 ... | 480,500 | 1,037,800 | 1,518,300 |
| 1880 ... | 648,799 | 1,333,093 | 1,981,892 |
| 1890 ... | 697,643 | 2,271,603 | 2,969,246 |
| 1900 ... | 845,110 | 3,259,404 | 4,104,514 |
| 1910 ... | 993,952 | 4,789,104 | 5,783,056 |
| 1913 ... | 1,096,999 | 6,134,251 | 7,231,250 |
| 1920 ... | 486,404 | 3,839,850 | 4,326,254 |
| 1921 ... | 728,549 | 2,592,542 | 3,321,091 |
| 1922 ... | 1,306,688 | 4,917,380 | 6,224,068 |

The total net register tonnage of ships entering Swansea grew steadily till, in 1913, the figure of 3,344,777 tons was reached. After a heavy set-back during and since the war the record of 1913 was slightly exceeded in 1922, when the figure attained was 3,387,147 tons.

The Swansea Harbour Trust was incorporated in its present form (representative of various interests) in 1854, continuing the work of an older body dating from 1791. Metal industries, with coal, have, since the port began to develop, always been the basis of its trade. In the early days large quantities of copper ore were imported for smelting. Copper, silver, iron, steel, zinc, lead, and tin all figure in various forms in the local industries and shipments. Three-fourths of the tinplates produced in Great Britain are made within twelve miles of Swansea, and are largely exported here.

### Tinplates

Tinplates are thin steel plates coated with tin, used for making containers for all kinds of food, for oil, and for a hundred and one other purposes. The manufacture first became an industry on a fairly large scale in South Wales near the end of the eighteenth century. By 1862 over a million boxes per year were being exported. The exports doubled themselves every decade thereafter for a time, the increased demand coming chiefly from the United States, where there were no tinplate works. The Americans in 1891 put a heavy tariff on im-

ported tinplates, and succeeded in establishing an industry, at great cost to a variety of other interests in their own country. For a time the Welsh industry was seriously depressed, but both home consumption of tinplates and exports to other countries greatly increased, so that within seven or eight years over four-fifths of the 500 mills which had been working in 1891 were at work again at an increased rate of production per mill. There are now about 530 mills in South Wales, many of them being associated with steel works which supply the bars that are rolled into sheets. About 80 per cent. of the total output of tinplates is exported, largely to the Far East, but also to the principal European countries and to South America. The following figures show the exports of tin, terne, and black plates from Swansea in recent years :

| | Coastwise | Foreign | Total Net Weight |
|---|---|---|---|
| | Tons | Tons | Tons |
| 1900 ... | 49,420 | 183,327 | 232,747 |
| 1905 ... | 65,849 | 238,846 | 304,695 |
| 1910 ... | 102,397 | 303,169 | 405,566 |
| 1913 ... | 117,933 | 350,296 | 468,229 |
| 1915 ... | 95,540 | 280,645 | 376,185 |
| 1920 ... | 86,753 | 233,617 | 320,370 |
| 1921 ... | 40,175 | 145,372 | 185,547 |
| 1922 ... | 59,581 | 358,654 | 418,235 |

### Coal Shipments

The export of coal, coke, and patent fuel during recent years from Swansea in tons weight has been :

| | Coal and Coke | Patent Fuel |
|---|---|---|
| 1890 ... ... | 1,488,242 | 386,905 |
| 1900 ... ... | 2,404,793 | 503,842 |
| 1910 ... ... | 3,560,289 | 653,993 |
| 1913 ... ... | 4,530,352 | 924,731 |
| 1920 ... ... | 2,233,298 | 1,145,236 |
| 1921 ... ... | 1,710,223 | 380,298 |
| 1922 ... ... | 3,241,483 | 619,381 |

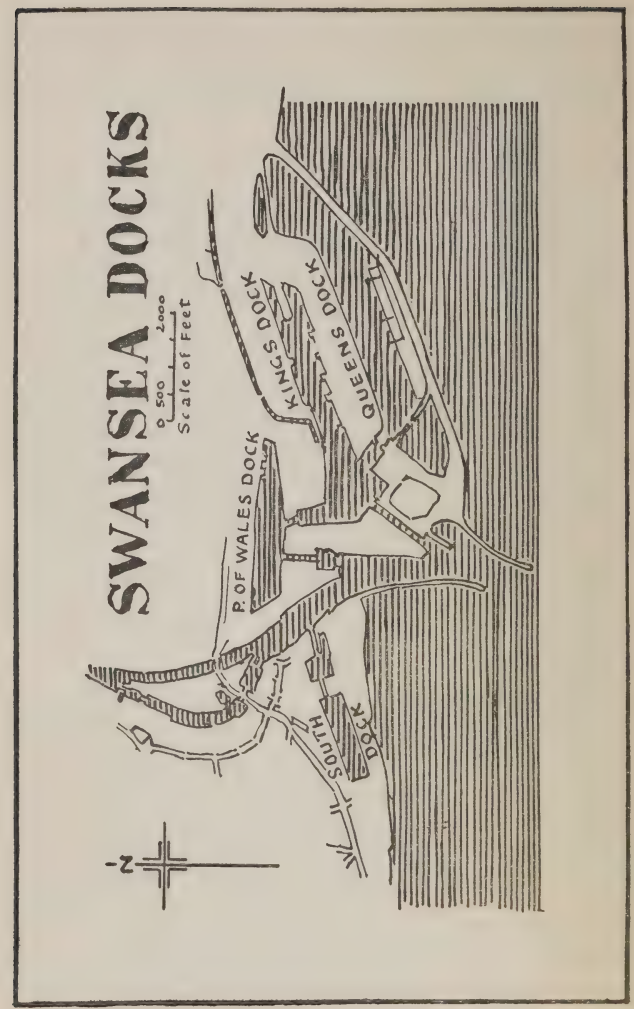
The coalfield here is close to the port, instead of some distance inland, as is the case farther eastward in South Wales. Indeed, the coal measures extend under part of Swansea Bay. As indicated in the last chapter, the western part of the coalfield, round Swansea and Port Talbot, is where anthracite is obtained, and these ports have practically a monopoly of the shipment of this very valuable form of the mineral. Swansea has steam and bituminous coal to the west of it and anthracite to the north-west. Its situation, therefore, is such that, for the shipment of coal from a considerable part of the field—the least developed part, moreover, in which there is the greatest scope for increase of output—Barry, Cardiff, and Newport are not in competition. The more westerly port, though not the centre for such extensive dealings as Cardiff, has its own coal market.

The useful statements of the trade of the port issued monthly by Mr. P. W. Phillips, the General Manager for the Swansea Harbour Trustees, show

that, in addition to its metal and coal trades and the new and growing oil trade, Swansea imports grain, timber, and pit-wood, and does a very considerable trade in general merchandise.

### The Docks

The dock accommodation, increased from time to time, is now very extensive, comprising in all an area of 281 acres, a total not far short of that of Cardiff (inclusive of Penarth and Barry) and substantially exceeding Newport's dock area of 136 acres. The North Dock at Swansea was formed in 1852 by dockising part of the River Tawe. The South Dock (now used by coasters and trawlers) was opened a few years later. The larger docks are the East, or Prince of Wales Dock, opened in 1881, and the King's and Queen's Docks, which have more recently been constructed on the old foreshore to the southward of the Prince of Wales Dock within the shelter of a great sea embankment. The King's Dock, the first sod of which was cut by his late Majesty in 1904, was opened in 1909, and has the very large area of 71 acres. In the King's and Prince of Wales Docks may usually be seen a number of the liners which keep up regular communication with all the principal ports of the world. All the docks are well equipped with coal hoists and railway and other facilities. Besides shipping coal as cargo, much bunkering business is done. The Queen's Dock, though rather more than twice the area of the King's Dock, is not provided with quays.




SWANSEA DOCKS.

### Oil Development

It is in the Queen's Dock that at a number of jetties oil tankers have recently begun discharging crude petroleum. The net register tonnage of tankers entering during 1922 was 558,069. The oil passes from the ships by pipes to transit tanks, and thence by pipe lines to the Llandarcy Refinery of the Anglo-Persian Oil Company at Skewen, four miles distant. The refinery, opened by the President of the Board of Trade in June, 1922, covers 650 acres, took three years to build, and cost £3,000,000. By means of the pipe system the liquid refined products are returned to Swansea for export, and oil bunkering facilities are also provided in a position enabling ships to take supplies without having to enter dock. The arrangements are such as to allow of bunkers being shipped at the rate of 500 tons per hour.

The refinery, at which are manufactured the whole series of refined products from the crude oil, is the first of such importance to be established in this country, and this oil development is a matter of much consequence both for Swansea and generally. For the port it has meant already a very substantial addition to traffic and revenue—imports in 1922 were 666,828 tons, and exports 560,712 tons—and may bring other advantages. An additional very large dry dock, the construction of which is now well advanced, may probably be used by the oil tankers.

The port is already well provided with dry docks,

but early in 1922 the Harbour Trustees granted a lease to Messrs. Palmers (Swansea) Dry Dock Company, Ltd., of sufficient land for two new dry docks. The first of these is now being constructed by the contractors, Sir John Jackson, Ltd. It is expected to be available before the end of 1923, and it is quite on the cards that as soon as the first dock is completed the second one will be put in hand.

The Anglo-Persian Oil Company has made Swansea its base for the distribution of refined products over a very large area. Oil is distributed from the port to depôts under the control of the company (or subsidiary companies) at Abadan, Antwerp, Christiania, Copenhagen, Danzig, Dunkirk, Hamburg, Port Arthur (Texas), Port Said, and Suez.

### Amalgamation with G.W.R.

The Swansea Docks are surrounded by over sixty miles of railways and sidings, having junctions with the Great Western and the North-Western and Midland Railways. The Rhondda and Swansea Bay Railway has, under the grouping scheme, been amalgamated with the Great Western.

During the war, when railways were placed under Government control, the South Wales ports at which short railways and docks were under the same ownership were taken over, the docks being treated as part of the railways. Swansea, however, having no railway other than the lines and sidings adjacent to the docks, was not treated as a railway

port and was left to itself while the neighbouring ports were taken over. In consequence of this action, which appears to have been based on an arbitrary, or at all events an exceedingly narrow ruling, traffic was diverted to other places, and Swansea suffered severely. So much so that after the war the Harbour Trustees were unable to meet the interest due on their stock. Later on trade revival was checked by the three months' coal strike of 1921. A critical period has, however, been successfully passed, and recent trade returns have been very encouraging. The total imports and exports of Swansea to the end of 1922 have already been given.

Swansea Docks, not being "railway" property, were excluded also from the schedule of concerns to be amalgamated with the Western Group under the Railways Act of 1921, and the future of the port, situated in close proximity to, and to some extent competing with, the other coal-exporting centres in South Wales, was much discussed. In addressing the last annual meeting of the Swansea Metal Exchange, Mr. Frank Gilbertson said that, with its great and varied trade, magnificent docks, and the advent of the oil industry, Swansea should be the cheapest port in the Kingdom, but this, he considered, depended on a progressive policy being within the means of the authority that owned it, and he expressed the opinion that the taking over of Swansea Docks by the Great Western Railway Company would result in a rapid improvement of

COAL HOISTS, KING'S DOCK, SWANSEA.

the value of the property, great economy in working, and the development of the town.

### Provisional Agreement

The problem of the future of the port which had arisen was difficult, but the Chairman of the Harbour Trustees had shown his faith in the prospects of Swansea by advancing a very large sum, amounting to over £63,000, for the use of the Harbour Trustees without interest during the critical period following the war. Mr. Roger Beck believed in the port in any case, and showed great public spirit by his action. The problem of the future has been dealt with by a decision on the part of the Harbour Trustees to enter into an arrangement with the Great Western Railway Company, and though the terms require Parliamentary sanction, which cannot be obtained until probably July, 1923, a definite agreement has been made whereby it has been settled, subject to the necessary confirmation, that the railway company will assume the liabilities of the Harbour Trustees under their mortgages, and will pay the arrears of interest on the Trustees' stocks and all other current liabilities, including advances made by the Municipal Corporation and Mr. Roger Beck. The railway company will take over the harbour, docks, and whole undertaking of the Trustees, and issue stock to the holders of harbour stock to yield the same income.

The railway company has expressed its willingness to undertake that, in the event of the above

proposals materialising, it will be the intention of the company to do its utmost to work, with the maximum of efficiency, the unified system of docks which will be formed in South Wales. In all matters affecting the various towns and docks its aim and object will be to hold the balance evenly between the various interests, and in furtherance of this policy it will undertake to maintain in a full state of efficiency the tipping and other shipping appliances at Swansea Docks.

The question of railway and dock amalgamation as affecting South Wales in general was discussed in the last chapter, and does not call for further comment.

## PORT TALBOT

Port Talbot, as incidental references have already indicated, is not far from Swansea. Only within the last thirty or forty years has Port Talbot become a centre of considerable shipping business, but it is no mere upstart place. A certain air of distinction invests it. The situation is singular. Backed by great hills close behind its houses, the town stands among the sand dunes which border the eastern shore of Swansea Bay. The sand, driven by westerly winds, long ago obliterated not only the Roman road which ran between the mountains of Morganwg and the sea, but also the medieval city and port of Kenfig. There remained, however, a harbour at the mouth of the Avon. The River Avon comes down through a narrow valley between

the mountains. Close to its mouth was the ancient borough of Aberavon. This is now part of the present borough of Port Talbot, and the modern docks include the site of the old harbour. Here a Company of Copper Miners, with headquarters at Cwmavon, built in early Victorian days a dock, but only a small trade was done until after 1894, in which year the formation of the Port Talbot Railway and Docks Company was authorised by Parliament.

What had to be done—what was done—amounted virtually to the establishment of a new place of shipment, and Port Talbot is thus the newest of the South Wales ports. At all other places—Llanelly, Swansea, Cardiff (including Barry), and Newport—business was already established when the construction of the Port Talbot Docks was completed and they were opened in 1898. The new port had to make a place for itself as a coal-exporting centre. This was facilitated by the circumstance that the distance from certain important parts of the coalfield was substantially less than to any other place of shipment. Moreover, the work of construction included the building of short lines of railway to connect the new docks with adjoining valleys and bring down the coal.

### Railway Connections

By its railway connections Port Talbot has been able to compete on equal terms with Cardiff for coal from the upper part of the Rhondda Valley.

The railways directly in touch with Port Talbot Docks are the Rhondda and Swansea Bay line from the Rhondda district (which comes down the Avon Valley to Port Talbot and along the coast to Swansea) and the lines constructed by the Port Talbot Railway and Docks Company. One of these latter lines also traverses the Avon Valley, connecting the port with the Whitworth district. Another brings coal from the Llynfi Valley and from Maesteg down the Duffryn Valley to the docks, while a third taps the Ogmore and adjoining valleys. All these lines, along with the Port Talbot Docks, are now, of course, amalgamated with the Great Western Railway, the main South Wales line of which passes through Port Talbot. Before the grouping scheme was carried into effect the railways were, however, worked under agreements in conjunction with the Great Western. The change is that the docks also come under grouped railway management. In this connection an interesting personal point is that Mr. E. Lowther, who for many years was Manager of the Port Talbot Docks—and a North Countryman, like so many others who have directed affairs in South Wales—has become Goods Manager of the Great Western Railway. Both Mr. Lowther and Mr. E. Knott, the Secretary of the Port Talbot Company, became associated with the undertaking in the earliest stages of its development.

## A Growing Port

Since the new docks were constructed the colliery districts which closely surround the port have been opened up, and both imports and exports have grown greatly. The following figures of total imports and exports are significant:

| | Imports (Tons) | Exports (Tons) |
|---|---|---|
| 1899 ... ... | 81,926 | 253,006 |
| 1900 ... ... | 108,339 | 434,799 |
| 1905 ... ... | 152,461 | 1,203,535 |
| 1910 ... ... | 284,985 | 1,996,710 |
| 1913 ... ... | 278,175 | 2,519,671 |
| 1915 ... ... | 217,137 | 2,261,078 |
| 1920 ... ... | 194,846 | 1,871,949 |
| 1921 ... ... | 138,317 | 931,016 |
| 1922 ... ... | 275,767 | 2,283,701 |

One picturesque feature of the trade of Port Talbot has disappeared since the war. A large number of French and German sailing ships used commonly to be seen here. Having brought cargoes of nitrate from Chile and discharged in Liverpool, they loaded coal at Port Talbot for their return voyages. They come no longer, but the business of the port as a whole continues to grow, and seems likely to go on expanding. The development of the western part of the South Wales coalfield is still in progress, and there is every probability that the exports from Port Talbot will become larger.

Port Talbot has 97 acres of deep-water docks, and ships all classes of coal—bituminous, steam, and anthracite. Its docks are capable of accommodating ships up to 450 feet in length, carrying up

to 5,000 tons of coal. The storage sidings for waggons and the coal-shipping appliances enable very rapid dispatch to be given, and, besides loading cargoes of coal, the port does considerable bunkering trade, its nearness to the sea and easy approach giving it great advantages for this purpose.

Like Swansea, this near neighbour of the older port is a centre for metal industries. Copper and iron ores are imported and smelted, and there are large works for the making of iron and steel. Bars, sheets, rails, etc., are turned out, and tinplates are also manufactured. Patent fuel making is another industry. Pit-wood for the mines is imported, and dry dock accommodation is available. With the growth of industrial activities population is increasing, and, taken as a whole, Port Talbot has prospects of great promise. In recent years the dock accommodation has been considerably enlarged, and further improvements are in contemplation.

## COAL AND OIL

Before passing on from South Wales it may be worth while to pause and examine one or two broader facts and considerations about the marketing and exporting of coal, the staple business of the Welsh ports. That business depends on the continuance of the coal industry, and various questions have been raised as to the future of coal. It has been suggested that presently coal will be replaced

by oil, and that the mining industry, with all that depends on it, will disappear. Forecasts like that, however, distort possibilities to the point of absurdity. The world's production of petroleum, though it has increased phenomenally in recent years, is not more than equivalent to one-tenth of the production of coal. That fact in itself is sufficient to dispose of irresponsible babblings about revolution in methods of transport from the use of oil. Moreover, the reserves of coal are more or less matter of calculation, and will last many centuries, whereas oil supplies are of very uncertain duration, and will come to an end in a comparatively short time unless new and large discoveries are made.

### South Wales Trade

While any idea that the coal trade in general is in danger from the competition of oil may be dismissed, it must be admitted that the South Wales coal trade is in a special position in this respect. South Wales coal, as has already been mentioned, is exported mainly for use in steam navigation, and perhaps in no direction has the use of oil developed so extensively as it has in connection with the propulsion of ships. In 1914 the number of ships using oil was almost negligible; now one-fourth of the mercantile marine of the world consists of oil-burning steamers and motor vessels, while warships also depend more and more on oil. South Wales has had an exceedingly good customer in the British

Admiralty, and that customer alone is taking a million tons less coal than formerly. The rapidly increasing substitution of oil for coal in ship propulsion, therefore, very materially affects South Wales, and gives special importance to the oil development at Swansea to which reference has been made.

Another point affecting the position of South Wales is that, compared with 1914, the proportion of the sea-going shipping tonnage of the world which is British is substantially less, while American shipping has very greatly increased. The propulsion of our own ships has been the use to which a large part of our coal exports has been put. Now, not only have a great many of our own ships adopted another fuel, but our shipping lead in relation to other nationalities is less, and America has advanced to the position of being able to undertake a much larger share than formerly of the sea-carrying trade of the world. Besides specially affecting South Wales, these changes—the advance of America in particular—are of very great importance.

### The American Factor

The United States is rich in both coal and oil. Its reserves of coal are half the world's total, and it has many natural and other advantages on which it is not necessary to dwell now in detail. Not only its present, but its prospective production of coal is very large. The market for coal depends on the

cost not only of production, but also of transport. Apart from temporary disturbances resulting from the war, our market in the Indian and Pacific Oceans has been affected by increased production in Eastern lands. The countries of Europe and South America remain as our principal customers for coal. The latter are as easily reached from the United States as from this country.

These considerations open large questions, on which, however, other factors may bear, as, for example, the question of return cargoes from South America and the reputation for excellence held by British coal. Moreover, those best qualified to know are insistent that new and more economical uses for coal will be found and must be encouraged. The coal of South Wales and other British fields will undoubtedly continue to be required. There is no ground for disquietude on that point, but in what form our coal will be used, to what extent it will (in the form of coal) be exported, and in what way the important American factor will bear upon future developments are questions which must of necessity be left unanswered for the present.

# VII.—LIVERPOOL

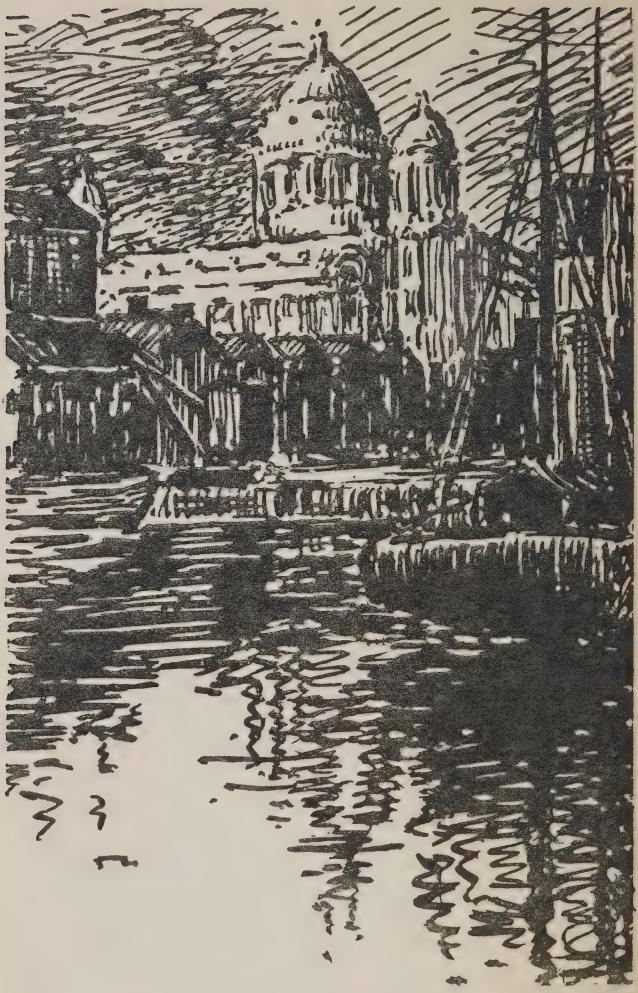
THE axis of the earth, as Oliver Wendell Holmes discovered, sticks out visibly in every town and city, and, though the fact is not generally known, the real reason why the magnificent offices of the Mersey Docks and Harbour Board were built where they now stand is that the Liverpool axis is located there. Compared with specimens which may be found elsewhere, this is a brand new hub. At a date which, historically, is but as yesterday, it was not. According to a curious map which you may see in the old Admiralty Board Room in Whitehall—painted on the oak-panelled wall—there was no Liverpool in the eighteenth century. On that map are many familiar names of ports round the East and South Coasts of England, but in the north-west only Chester and Lancaster are shown.

Indeed, the expansion of trade on both the Mersey and the Clyde in comparatively recent years marks an epoch. The shipping business of this country not only grew, but tended to concentrate in a few large ports. This change coincided with the transition from sail to steam, from wood to iron and steel. The expanding trade done with larger and faster ships was facilitated by the skill, not only of naval architects and shipbuilders in

producing the ships, but of engineers who planned and carried out great works of dock and canal and railway construction. Bigger ships needed deeper harbours and docks, while the employment of mechanical power for land and sea transport quickened the pace everywhere. Towns grew rapidly. The increase of population in the north commenced in the seventeenth century, when Manchester had already become an industrial centre, but it was not till the eighteenth century that the business of Liverpool began to be of any great consequence. In 1709 the first slave ship sailed from that port, which, for nearly a hundred years thereafter, was prominently identified with that traffic. Shortly before the business ceased Liverpool had six-sevenths of the whole trade. Other kinds of traffic with the West Indies, Africa, and America developed, and the commerce of Liverpool increased steadily. Canals from Liverpool to Manchester and all parts of the cotton, salt, and coal districts, the construction of which began in 1720, formed a network of communications, and, till displaced by the growth of railways, aided in the development of the Merseyside docks.

### The Dock Estate

The old tidal harbour being insufficient for the shipping, the construction of the first dock was begun in 1710. It was finished in ten years. Fifty years later there were three docks, and indeed the extension of the dock system since the "Old Dock"



DOCKS BOARD'S OFFICES.

was completed just over two hundred years ago has been continuous.

"The docks," as Sir J. A. Picton has pointed out in his "Memorials of Liverpool," "are both the cause and the consequence of the prodigious expansion of commerce on the banks of the Mersey, their progress and that of the town being indissolubly connected together."

There was an increase of business at Liverpool after the American War of Independence—a war which had undermined the prosperity of Bristol—and, during the closing years of the eighteenth and the opening years of the nineteenth century, the process of extending the line of docks along the Liverpool shore of the Mersey estuary—which here runs almost due north towards the sea—went steadily forward. From 1824 to 1860 construction proceeded under the guidance of the late Mr. Jesse Hartley as Docks Engineer.

During this period the Birkenhead Docks on the opposite side of the river came into being as a rival undertaking. Into the "contest between the two shores of the Mersey which raged for twelve years with much bitterness," and, Sir J. A. Picton remarks, "led to an extravagant and useless waste of capital almost unparalleled," it is not necessary to enter. In 1855 the Birkenhead Docks were taken over by the Liverpool Corporation.

The Liverpool Docks had been constructed and managed by the Corporation from their commencement, members from outside the Corporation having

been added to the original Dock Committee. The "town dues" on goods landed and shipped, which were tolls anciently reserved by the Crown on the grant of a charter to the town, and ultimately purchased by the Corporation, had, with the growth of trade, come to form a large part of the corporate revenue. Dissatisfaction at the burden of these dues on trade had been growing in the manufacturing districts served by the Port of Liverpool, though out of the receipts payments were made for port purposes. Public opinion was not satisfied as to the administration of the money, and, after much discussion and Parliamentary inquiry, municipal ownership and management of the Liverpool Dock Estate was terminated by an Act of 1857 which made over the docks and the town dues to a body of public trustees—the present Mersey Docks and Harbour Board—£1,500,000 being paid to the Corporation as compensation for the transfer of the town dues. The promoters of the measure by which this change was effected were Manchester commercial organisations and the Great Western Railway Company.

The Mersey Docks and Harbour Board has twenty-eight members, of whom twenty-four are elected representatives of the payers of rates and dues on ships and goods, while four are appointed by the Mersey Conservancy Commissioners. It is perhaps desirable to emphasise the fact that the port authority of Liverpool is a public trust which, under its constitution, devotes its revenue to the

upkeep and improvement of the port, and is not a body concerned to make money for distribution as profit.

### Trade and Transport

Before referring to the later history of the Dock Estate, it is interesting to recall the character of the trade and the means of transport which had been developing up to 1857. Tobacco and sugar were naturally prominent in the Transatlantic business. Cotton came first from the West Indies; later, of course, from the United States, and also from Africa and other producing countries. Corn was another of the early imports, the transport of which expanded into a great business. The timber trade, too, was important. The provision trade of Liverpool was of more recent origin, dating from 1843. The circumstance that for corn, cotton, and other commodities Liverpool became a market as well as a shipping centre, had a great deal to do with its progress. The first Liverpool Corn Exchange was opened in 1808, when the Cotton Exchange had already been in existence for some time.

Proximity to the manufacturing districts of Lancashire and the West Riding of Yorkshire gave Liverpool a varied export trade, which included also Staffordshire pottery and salt from Cheshire.

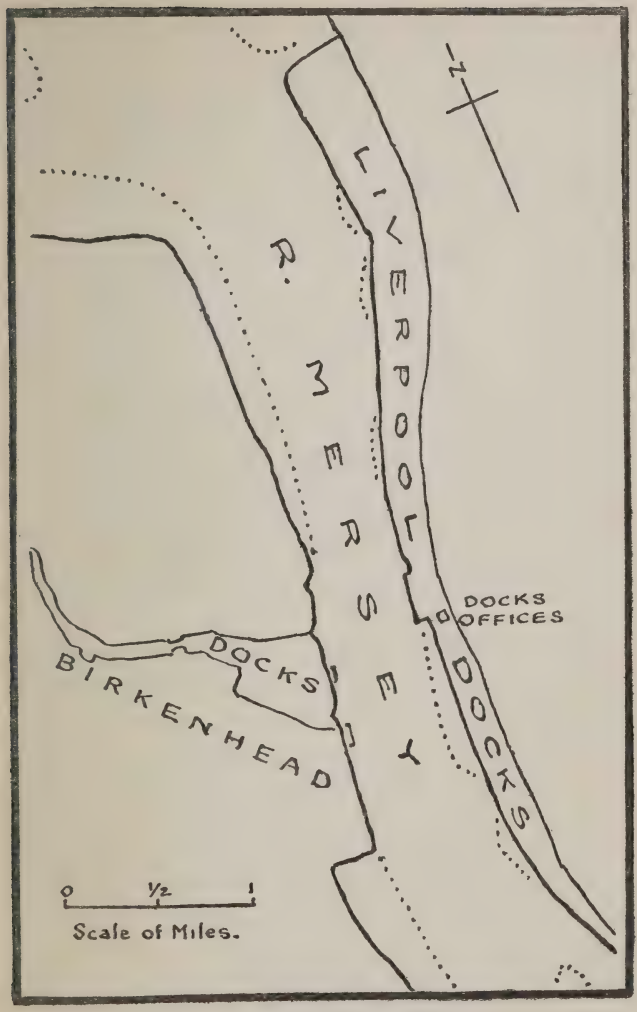
In those earlier days were the beginnings of steam navigation. The *Royal William,* built for the Irish passenger trade, was the first steamer to cross the Atlantic from Liverpool to New York.

She made the voyage in 1838, but, not being suited for the Atlantic passage, was withdrawn the following year. The voyages of the first steamers of the Cunard Line, however, soon afterwards did much in establishing ocean steam navigation. The first to sail was the famous *Britannia,* which crossed from Liverpool to Boston in 1840.

Ten years before this the Liverpool and Manchester Railway had been opened, and its amalgamation in 1846 with several other lines which had been constructed brought the London and North-Western Railway Company into existence. Having recalled these earlier landmarks, we can go on with the outline of the development of the port.

### The Mersey Board

The policy which the Mersey Docks and Harbour Board has pursued since its formation, though from time to time the subject of criticism, resulted in the continued growth of the trade of the port up to the period of the late war, and, concurrently with this growth, in the great expansion and development of the system of docks and dock estate. Whatever force there may have been in criticisms levelled at the Board, it has achieved results of great magnitude. Under its direction Liverpool has risen to be one of the greatest ports of the world—not merely great in its physical extent and the extent of its trade, but holding a high place in the efficiency of its equipment with the facilities for rapid handling demanded by modern business methods. Since the




LIVERPOOL DOCKS.

war there has been a dip in the upward curve. The set-back is an experience which Liverpool shares with the majority of ports, though there are special reasons why the business of the port has suffered depression during the last few years, and this will be referred to again later.

### Up-River Docks

Instead of tracing chronologically successive extensions of the dock works, it will be preferable to glance along the six or seven miles of docks which front the Mersey, and note from point to point some of the features of interest, particularly the more recent developments. The total area of the Dock Estate is 1,914 acres. The enclosed water area on the Liverpool side exceeds 430 acres, and, including the Birkenhead Docks, the total is over 600 acres. The dock quays are thirty-six miles in length.

The central portion of the Dock Estate comprises (in addition to the landing stage, which has been from time to time reconstructed and extended since the first stage was built in 1847) the older docks. On part of the filled-in site of one of these—the former George's Dock—stand the new offices of the Docks Board, and up-river from this point are the Canning, Albert, Salthouse, and Wapping Docks, used mainly by coasting and short sea traders. Above these is a group of docks where larger steamers and also sailing vessels are to be found—namely, the King's, Queen's, Cobourg, Brunswick,

Toxteth, and Harrington Docks. The Herculaneum Dock beyond contains coaling berths, and, until recently, had also accommodated vessels discharging or loading oil in bulk to or from the tanks which adjoin it. The use of the Herculaneum Dock for the oil trade was, however, merely a temporary arrangement, which has come to an end with the bringing into use of the oil jetty presently referred to.

### The Oil Trade

At this southern end the Dock Estate comprises a considerable area, which is now being developed for the purposes of the oil trade. Liverpool, which used to be the second largest importing centre, has yielded that place to Manchester, but is making provision for expansion. Large areas of land have been leased to several of the leading oil companies for the erection of tanks for the storage of fuel oil for bunkering and other purposes. Several tanks erected by the Board itself have been similarly let to companies. Additional Parliamentary powers were obtained in 1921, pursuant to which reclamation and other work has been carried out. Already the number of tanks for fuel oil has been increased, and their total capacity is now, or will shortly be, approximately 200,000 tons. These have been connected with the existing berths in the Herculaneum Dock by pipe lines, and are being similarly connected with the river jetty which has been in course of construction at Dingle Point for

the use of oil vessels and barges and has now been opened for traffic. The jetty is T-shaped, the main portion fronting the river being 500 feet long, while the approach gantry from the shore is 454 feet in length. Further adjoining land comprised in the Dock Estate is available, and may probably be utilised as the oil business extends.

### Down-River Docks

On the other side of the Docks Board's offices—northward and seaward—are the Prince's, Waterloo, Victoria, Trafalgar, Clarence, Collingwood, Salisbury, and Stanley Docks, devoted, like the other smaller central docks, to coasting and home trade ships. Next are the Nelson and Bramley-Moore Docks, the latter used for the shipment of large quantities of coal, and the Wellington Docks.

Normally, it may be mentioned in passing, Liverpool ships about 3,000,000 tons of coal annually, five-sixths of it for bunker purposes. These figures, however, do not include Garston and other coal-loading places on the Mersey outside the Liverpool Dock Estate.

The Sandon Dock accommodates larger vessels, while in the Huskisson and Canada Docks are to be found some of the largest liners trading to Liverpool. Farther north still are other large enclosed areas—the Brocklebank, Langton, Alexandria, and Hornby Docks, the last-mentioned being the centre of the timber trade. These were opened in the seventies and eighties, during which period also the

Harrington and Toxteth Docks, already mentioned, at the other end of the series were constructed. Since then improvements and extensions all along the line have been undertaken, and a scheme for further new docks at the northern end has also been proceeded with.

### The Gladstone Docks

This is the Gladstone Dock scheme (so named after a former Chairman of the Board) at Seaforth, for which Parliamentary powers were obtained in 1906. At the outbreak of war, however, only part of the scheme had been carried through. That was a dock constructed so that it could be used either as an ordinary wet dock or as a dry dock. This had been completed in advance of the rest of the work at the north side of the site, farthest away from the adjoining Hornby Dock, with an entrance direct from the Mersey. It was the largest dry dock in this country, being 1,050 feet long and 120 feet wide, and capable of accommodating the *Bismarck* (since renamed the *Majestic*), the largest vessel in the world, which was then being built in Germany. The complete scheme included the construction, in the space between the dry dock and the Hornby Dock, of a large vestibule dock with two branches. This is now being proceeded with, and meanwhile the dry dock has been thrown out of use because of a change of plan. The existing entrance at right-angles to the Mersey has, it is understood, been found difficult of use by the large steamers for

which it was intended. It has accordingly been closed, and, when the dry dock is reopened, it will be entered from the vestibule dock, to which admission will be obtained in a slanting direction from the Mersey by a lock 1,070 feet long and 130 feet wide. Since the cessation of hostilities the work has been pushed on. A junction lock with the adjoining Hornby Dock is already completed, and attention is being given to the completion of one of the two branch docks in advance of the rest of the scheme, so that it may be used by being entered from the Hornby Dock. Some idea of the importance of the Gladstone Dock scheme may be gathered from the fact that the total cost is estimated at about £7,500,000. When completed, 55 acres will be added to the dock area of the port, and there will be nearly three miles of additional quayage. Each leaf of the steel lock gates at the entrance will weigh about 500 tons.

Pending the reopening of the Gladstone Dry Dock, the largest dock of this kind available at Liverpool is the Canada, which is 925 feet long and 94 feet wide, and there are a score of other dry docks, many of them also of large dimensions.

With an eye to future developments, the Mersey Board has bought 340 acres of foreshore still farther to the northward, so that in years to come more docks can be constructed there if required.

### Birkenhead

On the Birkenhead side of the Mersey the wheat imports and the milling industry are the most important features—after Minneapolis the Port of Liverpool is the largest milling centre in the world. There are, besides, at Birkenhead considerable imports of oil. The oil depôt covers about 19 acres of land, which has been leased by the Mersey Board for the erection of tanks for the storage of oil. Fruit and cattle are other leading imports at Birkenhead, and several lines in the Eastern trade have their outward loading berths here. On this side of the Mersey also are a number of shipbuilding and repairing yards normally giving employment to large numbers of men.

Suggestive of the importance attached by the Mersey Board to the possibilities of future development at Birkenhead is the fact that it has recently made large purchases of land suitable for extensions. This side of the river has great advantages in the excellence of its local railway facilities and railway connections with the Midlands and the south.

### Warehousing and Cranes

The Dock Estate, as developed by the Mersey Docks and Harbour Board, has now been described, at least in outline, except that reference should be made to the extensive warehousing accommodation which has been provided. Tobacco, wool, and cotton are stored in great quantities—the tobacco

warehouse at Stanley Dock is probably the largest building of its kind in the world—and the cold storage space is larger than at any other port except London.

Besides the numerous hydraulic and electric cranes with which the various docks have been provided, the Mersey Board has in use a 200-ton self-propelling floating crane fitly named *Mammoth*. The floating pontoon on which the crane is mounted is 154 feet in length, and the lifting capacity of the appliance, both as to height and radius of action, is exceptionally great. The jib can turn a complete circle, and, up to 60 tons, has a radius of 185 feet, or, for 200 tons, of 110 feet.

### Dredging the Bar

The Mersey Docks and Harbour Board, as its full title indicates, is responsible for the harbour as well as the docks. It regulates the pilotage, buoying and lighting of the tidal approach to Liverpool, and it has done a great deal of deepening by means of dredging in the Queen's and Crosby Channels and at the bar. For a long time the question of the bar was not taken in hand, though upon the depth there at low water depended the class of vessels able to use the port. That depth was only 11 feet, but the bar had, as Sir J. A. Picton has expressed it, "a sort of sacredness in the eyes of those familiar with it, and any attempt to disturb it was regarded almost as a presumptuous interference with the ways of Providence." Expostulations from America

had, he suggests, some effect in disturbing the conservative attitude of the authorities, but expostulations from Manchester were also of some account. In fact, one of the objections on the part of Manchester to the policy of the Mersey Docks Board, and one of the reasons which led ultimately to steps being taken to convert Manchester into a seaport, was that the bar at the mouth of the Mersey had been allowed to remain as a danger to shipping. Operations for the removal of the Mersey bar were not begun till 1890. As an experiment two ordinary hopper barges were fitted with sand pumps, and, as the result was satisfactory, dredgers were specially constructed and put to work from time to time. Finally the *Leviathan* was built. A leviathan she looks, too. Capable of filling herself with 10,000 tons of sand in less than an hour, this monster cost £150,000. However, the dredging has been well worth while. The bar was not dealt with in time to satisfy complaints from Manchester, but now there is a depth of 32 feet at low water, where formerly the figure was 11. Any vessel can now come over the bar at practically any state of the tide and proceed into the Mersey.

### Railways and Canals

The system of railways with which the Liverpool Dock Estate is provided belongs to the Mersey Docks and Harbour Board, but the various railways serving the port are in direct communication with the dock and riverside. The London and North-

Western and Lancashire and Yorkshire Companies, now amalgamated, have a number of large goods stations close to the Liverpool Docks. The Cheshire Lines, with the constituent companies (the G.N., G.C., and Midland), also have stations, while the Midland Company, now included in the North-Western Group, has its own stations. The Birkenhead side is served by the North-Western, the Great Western, and the Cheshire Lines. The last-named system of joint lines, it is worth noting, were not grouped under the Railways Act.

The Leeds and Liverpool, the Rochdale, and the Shropshire Union Canals, connected with the Mersey, add to the transport facilities of the district.

### Garston

Besides serving the Liverpool and Birkenhead Docks, the London and North-Western Railway Company has its own docks at Garston, some four miles higher up the Mersey than the Liverpool Docks, and on the same side. Compared with Liverpool, this is a small place, but it does quite a considerable business, mostly in coal and mineral traffic. The Old Dock at Garston was opened about seventy years ago, and subsequently bought by the North-Western Company, which added the North Dock in 1876 and the Stalbridge Dock in 1909, making a total dock area of 28 acres.

The London and North-Western Railway Company owns and controls the entire working of the Garston Docks, which are directly connected with

the North-Western system. The railway sidings are very extensive. To a length of eight miles they are actually alongside the quays, and altogether there are seventy miles of siding here. Garston is in communication with the neighbouring South Lancashire and North Staffordshire coalfields. The hydraulic tips and other coaling appliances at the docks are up to date and capable of very rapid loading. Besides its coal business and traffic in mineral ores, Garston imports a good deal of timber, having a large sorting and storage ground, and also imports bananas and other fruit.

### Trade Expansion

Some references have already been made to the more important trades which give employment to the shipping of the Port of Liverpool. Cotton is of outstanding interest, for Liverpool is the central world market for this commodity, practically all the cotton reaching England being handled under the supervision of the Liverpool Cotton Association. So far as the corn trade is concerned, both Liverpool and London have their exchanges. The provision trade has become one of the largest and most valuable in the Mersey port. A trade association was formed in the seventies, and the present Produce Exchange was opened in 1902. Tobacco has been a leading import all through, and in this trade Liverpool has an unquestioned lead. From small beginnings the wool trade has grown in less than a hundred years into a great business in Liverpool.

Oil is a very recent but important development. Of these commodities, together with timber, sugar, fruit, cattle, rubber, hides, and numerous other things, Liverpool's import trade is composed.

The Board's wool warehouse is in Great Howard Street, near the Stanley Dock, and, though its full capacity is 160,000 bales, the working capacity is less than half that number of bales, because the practice is for buyers at auction sales to inspect the wool in the warehouse. In Love Lane, close by, a shed giving additional storage accommodation has recently been opened.

Wool is one of certain imported commodities the charges on which were specially reduced by the Mersey Board as from October, 1922. In addition to a general reduction of 5 per cent., special reductions were made in certain classes of goods, including cotton-wool, wool, wheat, maize, meat, bacon, and hams. For the previous figure of combined docks rates and town dues, which was 6s. per ton on wool, was substituted a rate of 3s. 6d. per ton. Details of alterations in port charges during and since the war have not been discussed in these chapters because reference to the numerous changes did not seem necessary in a general view, but the foregoing particulars are mentioned because they are indicative of special efforts which are being made by the Mersey Docks Board to develop Australian and New Zealand trade.

Exports from Liverpool are what they have always been since Liverpool shipping began to

grow—namely, the products of the industry of Lancashire and other neighbouring districts—but those products have, of course, increased enormously in volume as compared with earlier years.

### Shipowners' Association

Liverpool has, besides its various trade associations, its Steamship Owners' Association, and no account of the port would be otherwise than incomplete without at least a passing reference to this important body. Steamship companies established at Liverpool are great concerns with worldwide interests, and their organisation exercises much influence in relation to the broader movements connected with shipping. In the settlement of questions of policy, where a statesmanlike outlook is called for, no voice commands greater attention at shipowners' conferences than that of Sir Norman Hill, the secretary of the Liverpool Steamship Owners' Association. He has filled many public positions, including that of Chairman of the Board of Trade Advisory Committee on Merchant Shipping. Indeed, his reputation is international, and during a long period his wise counsel has helped towards the solution of many difficult problems arising out of the business of shipping.

### Effects of the War

The expansion of trade which went on in Liverpool up to the outbreak of war was all sound business. During the war the port was heavily

congested with traffic, but the same description of sound business can hardly be applied to what was done then. A great deal of trade was diverted by Government action from ports on the East and South Coasts to Liverpool. Whatever good purpose the activities of the port at that time served—and there has been no lack of laudatory reference since—they also had the effect of giving Liverpool a bad name, for traders became accustomed to connecting congestion and delay with the Mersey port, and this association has remained in the minds of many of them. This may in part account for depression during the last few years. Whereas the pre-war weight of Liverpool's foreign imports was over 7,000,000 tons per year, in 1921 they were less than 5,500,000 tons. In 1922 the figure was about 5,600,000 tons.

A factor influencing recent and current conditions at Liverpool has been, no doubt, the amount of the port charges. Liverpool was the last to put up charges, and it has been found difficult, at a time of reduced trade and with questions of deferred repairs and renewals claiming attention, to decide what course would be best. Though the Board is not concerned with making profits, it has to pay its way. Nevertheless, as above indicated, a reduction has been made.

Pending reduction of charges, the port, in competition with other centres, apparently lost ground. The relative dearness of Liverpool is alleged to have caused transference of business

to other ports, and in particular to Hull. Corn, wool, and transhipment trades were specially affected.

Turning from cargo to passenger traffic, it will be recalled that it was during the war period that the very large passenger steamers were transferred to Southampton for transport purposes. Now these larger boats engaged in the Atlantic passenger traffic have deserted Liverpool in favour of the English Channel port.

In any case, however, a heavy share of the shipping business of the largest and most important industrial district in the country goes through Liverpool. It is sometimes said that the growth of Liverpool is due to its standing on one of the finest natural harbours we have, and to the improvements made in the harbour having attracted shipping. No doubt, without the Mersey, Liverpool would never have advanced to its present position, but trade would never have come to the Mersey had not the country round, being a coal area, become covered with populous manufacturing towns, and had not this district become (its climate being favourable) the home of the cotton trade. Liverpool itself is not a place of extensive manufactures, and owes its importance not so much to the Mersey as to the character of the district around it. In the next chapter we shall go to the centre of that district—to Manchester.

# VIII.—MANCHESTER

STAND back against one of the high buildings in Albert Square and look across at the Town Hall, with its steep Gothic angles and great central tower. Here a man with the Oriental faculty of withdrawing into himself might see the drama of the Industrial Revolution unfold before him. Arkwright and Hargreaves and Crompton and Cartwright would play their parts before George Stephenson came upon the scene. As railways supplanted the early barge canals and machinery was perfected, more than a stage army of spinners and weavers would crowd the boards. Amidst the hum of industry and the smoke of mills and factories the thunderous voice of Carlyle would declaim upon the problems of industrialism—unsolved even to-day. "Sooty Manchester! It, too," the voice would declare, "is built on the infinite abysses; overspanned by the skyey firmaments; and there is birth in it and death in it; and it is every whit as wonderful, as fearful, unimaginable as the oldest Salem or prophetic city." Here in Manchester the landmarks of the Victorian age are plain. In the centre of the Square, the associations of which stimulate one's historical imagination, is the memorial to the Prince Consort, a typical figure of that age upon which we now look back out of a changed atmosphere, some of us with a contempt

for which there is but scant justification. The Town Hall itself was built in the seventies, when the tendencies of the Victorian period were almost worked out. It stands for the older Manchester, the city which had attained to great material prosperity —the building with its site cost £1,000,000—but was confronted with the prospect of decline because it lacked touch with the sea.

### The Ship Canal

The making of a waterway brought the sea and the ships to Manchester, and brought again the tide of trade and prosperity. On a June evening in the year 1882 there was a meeting at the house of Mr. Daniel Adamson, at Didsbury, which is memorable because that was the real start towards the making of the Manchester Ship Canal. A picture of the gathering was given by the late Sir Bosdin Leech in his history of the Canal. Mr. George Hicks, "a Scotch gentleman of commercial training and progressive ideas," and Mr. Hamilton Fulton, a London engineer, who had both for some years been advocating the idea of a ship canal to Manchester, were present, with Mr. Leader Williams, to meet a number of representatives of Lancashire towns and leading merchants and manufacturers. Mr. Marshall Stevens, who afterwards became the first manager of the Canal, also attended.

Mr. Adamson, subsequently the first Chairman of the Canal Company, was, according to Sir

Bosdin Leech, who was there himself, "in good form and with a strong Northumbrian burr reverted to the wonderful success attending the improvement of the Tyne, the Tees, and the Clyde, and felt sure the Mersey was amenable to similar treatment with even better results." Four-fifths of the export trade of Liverpool, it was mentioned, passed through Manchester. A provisional committee was appointed to obtain a survey and form a company, and a guarantee fund was established.

Reference to this historic gathering was made in the course of a recent conversation I had with Mr. Marshall Stevens. "I believe," he said, "that I am now the only survivor of those who were there. Certainly I am the sole survivor of members of the provisional committee which was appointed."

Though he has attained to three score years and ten, Mr. Marshall Stevens, who is still actively engaged in business, and was from 1918 to 1922 M.P. for the Eccles Division, greets one with the happy smile of a man in sound health, bodily and mentally. As one of the movers in the carrying out of the Ship Canal scheme and the developments which have followed the opening of the waterway, he is one of the makers of Manchester as it is to-day. Manchester, which centuries before had become the most populous town in Lancashire, depended for the prosperity of its textile manufactures on good and cheap communications. Tentative plans for a ship canal had been discussed for many years, but without result. The barge naviga-

tion connecting it with the Mersey had, when the ship canal was projected in 1882, passed into railway hands. The trade of Manchester was suffering not only from high charges imposed by Liverpool, but from high railway rates between the two places.

Undoubtedly the advent of the Ship Canal was mainly caused by the heavy shipping charges at Liverpool. Manchester's case against the Mersey Docks and Harbour Board was that the Liverpool town dues (which, as pointed out in the chapter on Liverpool, had been made over from the Corporation to the Mersey Board) should have been discontinued, that the Board had misapplied and wasted its funds and spent money on unsuitable works, while it had allowed the bar at the mouth of the river to remain as a danger to shipping. It was alleged that local and personal interests were favoured, and that all these causes contributed to make the port expensive.

The details of the long Parliamentary struggle, in which Manchester "shook off the Liverpool toll bar," and of the financial and engineering struggles which ended in the completion of the great work of making Manchester a seaport by the construction of the Ship Canal, need not be recounted here, but it is of interest to note some particulars about the work. The canal is thirty-five and a half miles in length. From Eastham, six miles above Liverpool, where the canal commences, it runs for nearly thirteen miles alongside the Mersey estuary to Runcorn, thence inland to Latchford, near War-

rington, from which point it proceeds in a deep cutting through the valleys of the Mersey and Irwell to Manchester. The depth is now 28 feet (a deepening throughout the canal from 26 feet to 28 feet having been completed in 1908), and the bottom width is 120 feet, so that large vessels may pass one another at any point. The total cost of the canal (including purchase of land and of the Mersey and Irwell and Bridgewater Canal Navigations, expenditure on works, and Parliamentary and general expenses) has exceeded £17,000,000.

The business opening of the Ship Canal was on January 1, 1894, and the formal opening ceremony was performed by the late Queen Victoria in May of the same year. So Manchester freed itself from the Liverpool toll bar.

The central fact which dominates the new growth of Manchester is worth dwelling on for a moment. The establishment of a new port has been a rare occurrence in recent times. It cannot be done without the direct authority of the State. The right to hold a port is a franchise which might formerly have been acquired by grant from the Crown. The modern way is by Act of Parliament. Thus the Manchester Ship Canal Act of 1885 established "the harbour and port of Manchester," and gave the Ship Canal Company necessary powers and rights in the port area. Fifty miles from the open sea a new port was set up in the heart of an inland city, a centre of industry and trade which lacked only ships.

And now the ships have come. The canal was built for big ships, ocean carriers, great floating warehouses such as transport the goods of these days from one side of the world to the other. They have come in numbers. At any time huge vessels from the Far East, from the South and from the West, may be found discharging and loading in Manchester Docks. Ships of a capacity up to 15,000 tons dead weight trade regularly to the port.

### The Canal District

A journey up the canal by steamer, or a glance at a map, brings home the fact that the waterway serves many places besides Manchester. Three miles above Eastham, where the canal is entered from the Mersey through locks, the largest of which is 600 feet by 80 feet, is Ellesmere Port, a busy place where pottery materials, slates, pig-iron, coal, salt, and other like goods are handled, and ships are repaired at a floating pontoon. Here, too, is the terminus of and intercommunication with the Shropshire Union Canal. This junction is one of a number which connect the Ship Canal with the network of Lancashire canals linking up the district with the Midlands.

Recently the docks, wharves, and warehouses at Ellesmere Port, formerly occupied by the Shropshire Union Railway and Canal Company, have been taken over on a long lease by the Manchester Ship Canal Company. Though nominally in the hands of a canal company, this part of Ellesmere

MANCHESTER SHIP CANAL.

Port has been, in effect, railway property, as the Shropshire Union Canal Company was virtually owned by the London and North-Western Railway Company. The wharves and warehouses in question have been idle for some time as a result, apparently, of railway policy of bringing canals into disuse to conserve railway influence. The action of the Railway Company in taking a step which should lead to great developments at Ellesmere Port on the Ship Canal is apparently indicative of a change in policy.

A little higher up the Ship Canal is Stanlow Point, where there has been opened a new dock for oil carriers, referred to later.

Twelve miles up from Eastham are the important docks at Runcorn and a junction with the Mersey Estuary, reached after passing a connection at Weston Marsh with the Weaver Navigation. The traffic at Runcorn is very similar to that at Ellesmere Port. Farther on is the Warrington Wharf, then the Latchford Locks, and a junction at Rixton with the Mersey and Irwell Navigation. At Partington, a growing industriai centre, are railway communications and extensive coal shipping facilities.

Passing Irlam and Barton (at each of which places there are locks, the larger 600 feet by 65 feet, like other locks in the course of the canal) we are closely approaching Manchester. At Barton must be noted the remarkable aqueduct with a swinging span which carries the Bridgewater Canal over the Ship Canal, and also the oil storage depôt. Between

Barton and Manchester are, on the north side, the Irwell Park Wharf, where ores, pit props, and other kinds of timber are landed, and cattle wharves, and, on the south side, Trafford Park, with its numerous factories, workshops, and warehouses.

At the head of the canal the docks open out almost like the fingers of a hand. The last locks are passed at Mode Wheel, a few hundred yards below the quays. Above those locks the harbour is level water, which in the principal docks is 28 feet in depth. In the uppermost part, allocated to the coasting trade, the depth is somewhat less. Before describing the docks, their equipment and trade, it will be convenient to note a few points as to the effect upon the district of the opening up of the new waterway.

### Economic Consequences

The gradual growth of the total weight of merchandise passing through the Ship Canal since the opening year may be shown as follows :

| | Tons |
|---|---|
| 1894 ... ... ... ... | 925,659 |
| 1895 ... ... ... ... | 1,358,875 |
| 1900 ... ... ... ... | 3,060,516 |
| 1905 ... ... ... ... | 4,253,354 |
| 1910 ... ... ... ... | 4,937,631 |
| 1913 ... ... ... ... | 5,780,161 |
| 1915 ... ... ... ... | 5,434,046 |
| 1920 ... ... ... ... | 4,387,363 |
| 1921 ... ... ... ... | 3,293,670 |
| 1922 ... ... ... ... | 4,273,544 |

From the first the course of events showed that the movement which had led to the making of the

canal had a sound basis. Immediately after the opening of the new waterway reductions were made in ocean freights to Bombay, Egypt, and various ports within home trade and coastwise limits. The Mersey Docks and Harbour Board made reductions in their charges on a number of articles, and from Liverpool itself issued a report prepared by the local Chamber of Commerce admitting that Liverpool was then a more expensive port than most others, and that, at equal freights from abroad to Liverpool and Manchester, the cost of forwarding cotton to the mills was, in the great majority of cases, considerably cheaper via the canal than via Liverpool.

The economic value of the Ship Canal to the Manchester district is difficult to estimate in figures. An examination of this question was made in a paper read before the Manchester Statistical Society in November, 1912, by Mr. James S. McConechy (to which, I take the opportunity of saying, I am indebted for many interesting pieces of information), and in this paper the saving was put at £1,500,000 per annum. As a pre-war calculation this, no doubt, showed the results so far as figures could tell the tale, but the effect of Manchester's bold forward step cannot be fully measured in this way. It has reversed the declining condition in which Manchester was thirty years ago. It has brought many new industries and led to fresh developments of many kinds in the whole neighbourhood.

As a quotation in Mr. McConechy's paper reminds us, Mr. Gladstone made a forecast in 1892 in which he expressed the opinion that, for Liverpool at large, the results must be an enormous gain. "The Ship Canal," said the late statesman, "if it adds largely to the commercial means of the district, will draw to the Mersey more than ever the commerce of the world. And if that commerce of the world liberally bestows itself on the Mersey, depend upon it that not only in your days, but in the days of your children, your grandchildren, your great-grandchildren, and I know not how far down the course of generations, it will be Liverpool that will have the first, best, and most of it."

There can be no doubt that these words have proved themselves true, and that the trade both of Liverpool and of the whole of South Lancashire has benefited. There is no disputing that, in a remarkably short time after having been converted, by dint of determination and engineering skill, from an inland city into a seaport, Manchester advanced into the front rank of ports. The comparative figures set out in the introductory article showing the foreign trade of various ports as indicated by total net tonnage of shipping do not give Manchester a very high place, but, estimated on a basis of money value of trade, it has stood, in recent years, in the group of ports coming after London and Liverpool. This group includes Hull, Manchester, Glasgow, and Southampton. Their order of precedence among themselves has varied

in different years, but, broadly speaking, they may be classed together. On this basis of comparison the coal ports, of course, come out much lower relatively than on shipping tonnage figures, which are a measure of volume rather than of value.

### Cotton

Manchester itself has a population of about 750,000. To include 2,000,000 one has not to take a thirty-mile radius as at Cardiff. A circle drawn at a radius of only twelve miles from Manchester Docks includes a population of 2,000,000, and at twenty-five miles radius over 4,000,000 people are encircled. As Cardiff means coal, so Lancashire means cotton, though not quite in the same sense. Cardiff is interested almost exclusively in the one commodity. The Manchester district, on the other hand, is remarkable for the variety and importance of its industries, prominent among them being engineering, chemicals and dyes, though cotton stands first. For over a century and a half raw cotton has been imported into Liverpool, mainly from America and Egypt. In more recent years it has begun to come direct to Manchester as well. Approximately 40 per cent. of the world's spindles are in Lancashire—90 per cent. of these are within twelve miles of Manchester—and 85 per cent. of the product of the Lancashire mills is exported, along with the machinery and numerous other things produced in this great industrial district, to be exchanged for the foodstuffs which so largely

enter the country by the Mersey and for other imports.

Competition due to direct imports of cotton into Manchester brought about reductions in charges on cotton at Liverpool, and after the Ship Canal was opened there was a steady rise of cotton imports into Manchester up to the war period. The following are particulars of the number of bales of raw cotton imported into Manchester and Liverpool:

| | Manchester | Liverpool |
|---|---|---|
| 1895 ... ... | 66,261 ... | 2,813,739 |
| 1900-1901 ... ... | 549,873 ... | 3,725,000 |
| 1910-1911 ... ... | 709,293 ... | 4,349,000 |
| 1920-1921 ... ... | 327,793 ... | 1,954,000 |
| 1921-1922 ... ... | 354,178 ... | 2,353,000 |

The rules of the Liverpool Cotton Association, under which cotton warehoused elsewhere than in Liverpool cannot be tendered against "futures" contracts, tend to limit direct cotton imports into Manchester. The rules are no doubt intended to keep the handling of the cotton in Liverpool, but recently the Ship Canal Company undertook that it would carry cotton free from Manchester to Liverpool to fulfil contracts, and, moreover, Manchester has its own "spot" cotton market. The advantage of direct import to Manchester and storage there is that Manchester is nearer than Liverpool to most of the places where the cotton is eventually used.

At the last annual meeting of the Ship Canal Company (in February, 1922), the chairman said: "In evidence before Parliament in 1883, 1884, and

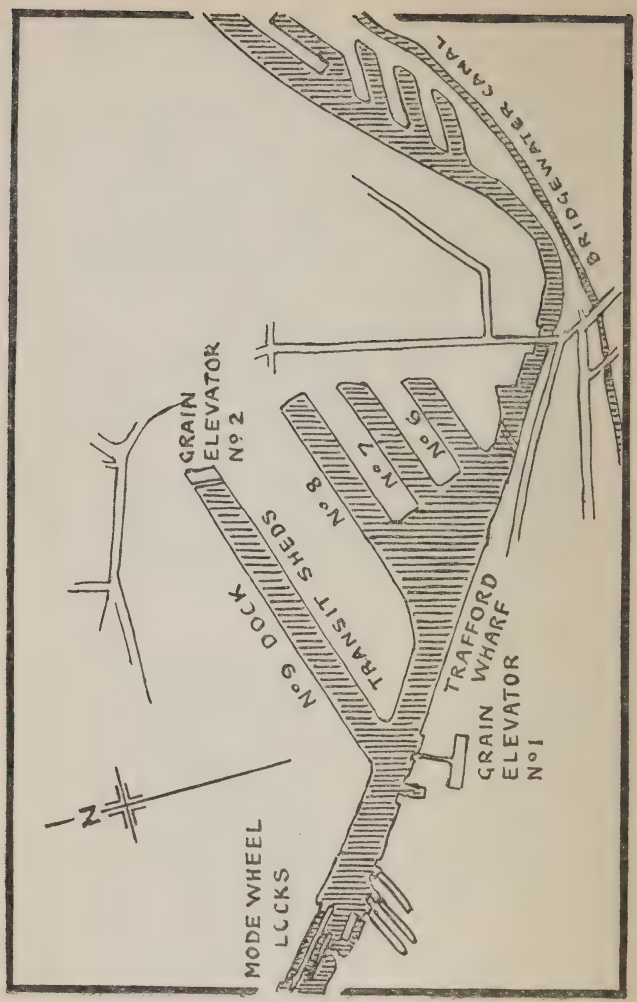
1885 it was stated that the cost then of bringing cotton from ex ship Liverpool to railway station at Manchester was 13s. 8d. per ton, while it was estimated that the total cost of canal tolls and landing charges, if a canal was made, would amount to 7s., showing a saving in favour of the Manchester route of 6s. 8d. per ton. To-day's rates show the saving to be 14s. 10d. per ton on raw cotton, or more than double the saving originally estimated in 1885."

In exports of manufactured cotton goods the Port of Manchester attained to the second place soon after the opening of the canal, but Liverpool continues to hold the leading position.

Having thus traced briefly the course of the Ship Canal and some of the consequences which have followed its construction, we can turn to details of the Manchester Docks and their trade.

### Docks Equipment

While all the docks are modern in design and equipment, that nearest the sea being the largest, the latest in construction, and representing in its equipment the most recent improvements, is the most interesting. This is known as No. 9 Dock, and is on the north or Salford side of the canal. It was opened by the late King Edward VII. in 1905. Two hundred and fifty feet wide, it is provided along the whole of one side of its length of nearly half a mile with a range of transit sheds, four floors in height, built of reinforced concrete,




MANCHESTER DOCKS.

and divided into blocks for safety from fire, but connected on each floor by bridges from building to building.

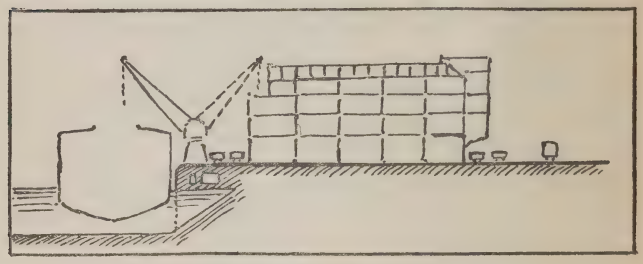
Along the quay in front of the sheds are electric cranes designed for rapid handling of goods. The use of electric power has facilitated the introduction of a device which not only saves time but labour. Instead of the crane-man occupying a position high up on the crane itself and controlling its movements in accordance with signals made to him by another man standing beside the hatchway of the ship, one man in the latter position on the ship's deck does all the work. In his hand he holds a controlling instrument connected electrically with the mechanism of the crane. He sees for himself what lifting, lowering, or swinging movements are required, and directly operates the crane.

### Refrigerated Produce

The ships one sees lying alongside the quay are discharging a variety of cargoes into the transit sheds. The cargo may be bales of cotton, it may be oranges, it may be refrigerated produce. If of the last-mentioned description it will be discharged from the ship direct into a section of the sheds which is fitted as a refrigerated transit chamber, where the goods may be handled and sorted in the same temperature as that in which they have travelled. From any floor of the shed they can be lowered direct into refrigerated railway or road

vehicles standing under cover at the back of the shed. Cold air stores in Manchester, it may be noted in passing, comprise the depôts of the Union Cold Storage Company, Ltd., of the Manchester Corporation, and of the Trafford Park Cold Stores.

The facilities at the transit sheds for passing goods on for rail or road transport are available not only in the refrigerated chamber but along the whole half-mile range of sheds. The cranes on the



SECTION OF TRANSIT SHED, NO. 9 DOCK.

landward side lower the goods in a shaft to which there is access from each floor, and the goods reach the vehicle on the ground level without any exposure to weather. No self-respecting Manchester man goes about his business without an umbrella. The climate, which is good for the cotton industry, has drawbacks in other ways, but security against damage from wet in the handling of goods is provided by the construction of the sheds. Extensive sidings for the marshalling of traffic adjoin the buildings.

### Grain

We have not yet exhausted the special features of No. 9 Dock and its surroundings. At the head of the dock stands a huge granary, officially known as No. 2. It is capable, like No. 1 on the opposite (Trafford Wharf) side of the canal, which is equal in size, of holding 40,000 tons of grain. All along the quay in a subway run belts for conveying grain to the granary, so that a ship berthed at any point can discharge grain in bulk either overside to barges in the dock or to these belts under the surface of the quay at the same time that it is discharging grain in bags or general cargo on to the quay or into the sheds.

The granary, like the transit sheds, is constructed of reinforced concrete. The appliances connected with it enable grain to be received at one time from six vessels at the rate of 900 tons per hour. Within the huge building, which towers high above its surroundings and contains 341 bins, are complete facilities for weighing, shifting, and cooling grain, and for delivering it into barges or coasters. This No. 2 elevator was built just before the war, No. 1 having been erected in 1897. No. 1, which is differently designed, with a high tower at the waterside, and the main building standing back somewhat, is capable of discharging vessels at the rate of 350 tons per hour. Besides the Ship Canal Company's elevators, one of the largest flour mills in the district, situated at the docks, has its own

elevator. Grain imports into Manchester before the war exceeded a total of 500,000 tons per year.

### Timber and Oil

From the top of No. 2 elevator one can survey the scene. No. 9 Dock, immediately below, runs its half-mile length to where it joins the canal, with the transit sheds along one side. On the other side of the dock is an open quay, backed by an extensive timber storage ground. This may be the site of a new dock (No. 10) some day, but at present it is devoted to the wood goods, which are a prominent feature of Manchester's imports. Prior to the war from 400,000 to 500,000 loads of timber were dealt with each year.

Beyond the site of the future No. 10 Dock are the Mode Wheel Locks, which, as already indicated, form the entrance to what may be called the harbour of Manchester, though, as we have seen, the whole canal, with its numerous places of shipment, is one long harbour or dock. Looking across the canal to the southern bank, there are several items of interest to note. Just below the locks are the wharves and jetties connected by pipe lines with the large oil storage depôt, where some half-dozen companies have their tanks. In quantity of oil imported Manchester ranks second among the ports of the United Kingdom. The largest imports of oil go to London. Liverpool used to stand next, but Manchester quickly developed this trade and

now takes second place. The facilities for handling and storing have recently been increased by the developments carried out lower down the canal at Stanlow Point, near Ellesmere Port. Low flash oil is not brought up to Manchester, but is discharged in an isolated position at Stanlow Point, at a new dock formally opened in July, 1922, where very complete and ample facilities are provided.

### The Dock Estate

Between the oil wharves below Mode Wheel Locks and the locks themselves is the foreign animals wharf. Just above the locks are three dry docks belonging to the Manchester Dry Docks Company. They are 535, 425, and 450 feet long respectively, and each 65 feet wide, and there is also a pontoon. Almost adjoining is the No. 1 grain elevator, to which reference has already been made, and then comes Trafford Wharf.

Behind the Ship Canal Company's land on the south bank of the canal, and with a long frontage to the waterway itself below Mode Wheel, is Trafford Park, the conversion of which from an ornamental park two square miles in extent into a busy industrial and warehousing area is a story which need not here be retold.

Closer at hand and on the north side of the canal just above the No. 9 Dock are the No. 8, No. 7, and No. 6 Docks, surrounded by transit sheds and railway lines, while a little higher up the water-

way, past the swing bridge which adjoins the dock office, and round a bend, are the Pomona Docks, where coasting business is carried on.

So we look round on a dock estate over 400 acres in total extent, the water space being 128 acres, and the quayage six and a half miles. The docks are in communication with the network of canals which surround Manchester, and, intersecting the docks, are eighty-five miles of railway lines belonging to the Ship Canal Company, and in direct communication with the railway systems of the country.

### Railways and Rates

Manchester was one of the earliest as it is now one of the greatest railway centres, ranking next after London. The line connecting it with Liverpool, opened in 1830, became, as we have noted, part of the London and North-Western Railway. The Manchester and Leeds Railway was one of the principal constituents of the Lancashire and Yorkshire Company's system, now amalgamated in the North-Western and Midland Group, which is to be known as the London Midland and Scottish Railway Company. The amalgamated lines are divided into northern and southern sections, the headquarters of the former being in Manchester. The Manchester, Sheffield and Lincolnshire Railway was, it will be recalled, the line which in recent years opened a "branch" to London and changed its name to the Great Central. As both the Great

Northern and the Great Central are in connection with the Manchester Docks, the Eastern as well as the North-Western Group is fully in touch with the port. The Cheshire Lines (worked jointly by the Great Northern, Great Central, and Midland Companies, and not scheduled with any group in the Railways Act) are also, of course, in direct communication with the dockside at Manchester. Through rates, it is important to note, are in operation, including canal and railway charges from the ship to any inland destination.

The city as distinguished from the docks is, however, at a disadvantage in regard to railway rates, and this question may arise as a definite broad issue to be settled before very long. Owing to coastwise competition, lower rates are granted to ports than to inland towns. The last revision of railway rates was completed shortly before Manchester had become a port. Manchester was therefore treated for the purposes of railway transport as an inland town. Since the Ship Canal was opened rates have been quoted from Manchester Docks based upon those to and from Liverpool in certain cases, but the broad question may be raised before the Rates Tribunal set up by the Railways Act, 1921, whether the whole of the Manchester rates should not be revised in view of its having ceased to be an inland town and become a port.

From this excursion into the question of railway rates we must return to complete the sketch of the trade of the port in general.

### Wool, Tea, and Fruit

Cotton, grain, timber, oil, fruit, and frozen produce have been mentioned among Manchester's imports. Wool, tea, bacon, tobacco, chemicals, and many kinds of raw materials must be added to the list. Direct shipments of wool have been received since the war, but this trade has not so far been greatly developed at Manchester. Apart from London, which is the chief market, wool has been imported for years at both Hull and Liverpool. Manchester has the difficulty that the established course of business carries the trade elsewhere, though it is true that Manchester is the nearest port to Bradford, with which place, the centre of the wool trade, there is good communication both by rail and road. Cargoes are still arriving at Manchester Docks, however, and a recent instance in which notably quick dispatch in unloading and storing wool was given was that of the *Tasmania,* which brought over 20,000 bales from New Zealand. These were all stored within a week. Suitable accommodation for wool storage and buyers' inspection has been provided on a large scale by the Port of Manchester Warehouses, Ltd., in Trafford Park.

The direct importation of tea at Manchester (and also, it may be noted in passing, at Glasgow and Liverpool) is a recent development, and the opinion has been expressed that Manchester, as the centre of a densely populated district, can advantageously

import the tea direct from India, store it in bond, and distribute it as required. The Ship Canal Company has provided storage room and handling facilities, and tea has been dealt with expeditiously. London is the established home of the tea market and of the experts who understand blending and other features of the business, but whether London will maintain its position, or whether direct importing at some of the larger provincial ports and distribution in their neighbourhood will increase is an open question. An authoritative opinion, free from prejudice on one side or the other, seems at present difficult to obtain.

Fruit imports at Manchester, which are increasing, include Canadian and American apples, with oranges, lemons, onions, and other similar goods from Spain, Sicily, and Egypt. Arrangements have recently been made for further direct sailings from Pacific ports through the Panama Canal to Manchester, providing facilities for the consignment of Californian fruit, barley, lumber, etc.

The goods exported from Manchester comprise mainly, as already indicated, manufactured cotton and woollen goods, chemicals, machinery, and salt.

### Trafford Park

The warehousing facilities afforded by the Ship Canal Company on their land adjoining the docks have, it should be noted in passing, been supplemented by the development close at hand of Trafford Park. Two square miles of land round

the old Hall were acquired by a company—the company over whose destinies Mr. Marshall Stevens presides—and upon two-thirds of the land warehouses and works have already been built by a hundred firms. The Ship Canal is on one side, the Bridgewater Canal on the other, and railway lines are everywhere. Besides being a hive of industry, the park contains warehouses for cotton, wool, grain, wines and spirits, canned goods, dried fruit, tobacco, and general merchandise. The Port of Manchester Warehouses, Ltd., have here storage room for over 500,000 tons of goods under cover (including large cold storage accommodation and also "cool" storage for bacon and other produce requiring medium low temperature), and almost unlimited open storage ground in addition. Manchester, in fact, handles almost every description of business, and is admirably equipped for dealing with all branches of transport trade.

### On 'Change

We have now, perhaps, fairly covered the ground —on paper—but to realise effectively what all this means one must go to the place and actually see the moving panorama of the city and the port. As in London, one may walk the city streets for miles without coming across anything to suggest the vicinity of a great seaport. Though the docks are in a central position, they are not seen till actually reached. Yet they are an integral part of the busi-

ness of Manchester. The traffic of the Ship Canal is not quite what it was before the war, but within twenty years of its inception the traffic passing through the canal had grown, as we have seen, to over 5,000,000 tons by weight per year. This is proof positive that the Ship Canal offers advantages which competing routes cannot show. It does, in fact, enable importers and exporters to effect substantial savings. To bring about change in any established course of business is difficult, but that traffic and business come increasingly to Manchester because of the facilities offered by the Ship Canal is beyond question. Here are docks and ships in the centre of a far-reaching industrial district, in the midst of a great group of manufacturing towns. The air is full of smoke and grime, but it seems full of energy as well, and the epitome of the whole is the Manchester Royal Exchange. Nowhere else is so immense a gathering of commercial men to be seen. The extent of the floor space is unequalled anywhere. On Tuesdays and Fridays, which are the busiest days, between 7,000 and 8,000 business men may be seen—and heard—filling the huge hall. The total membership of the Exchange is nearly 12,000.

This great assemblage is engaged in Manchester's business. The "business" in connection with cotton, of course, includes much besides shipping and dealing in raw cotton, and the crowded gathering on the floor of the Exchange includes men interested not only in yarn and cloth, but also in

cotton waste, china clay, chemicals, dyes, coal, iron and steel, textile machinery (new and secondhand), and insurance. Finance, of course, underlies all that goes on, and the banker is a figure without whom business would soon come to an end. And there are, of course, many other commodities besides cotton in which the men on 'Change are interested. Their transactions are with Australia, New Zealand, China, India, the Mediterranean, the United States, Canada—indeed, with all parts of the world. There are no docks or ships in this part of the city, but what is done on 'Change is a very important part of the business of the docks and of the ships. The position which Manchester was losing has been regained, and this has been accomplished, there can be no doubt, mainly as a consequence of the making of the Ship Canal and the skilful development of that undertaking. There are problems and difficulties still to be faced, of course. It cannot be said that the outlook in the cotton trade is all that could be desired, and there are problems not yet fully solved more immediately connected with the maritime business of Manchester. One of these calls for specific reference.

### "Conference" Difficulties

Manchester's problem, which proved more difficult of solution than the physical task of constructing the canal, was that of enticing traffic out of ruts in which it had settled, sometimes regardless of

economy, and, as Mr. Marshall Stevens pointed out in an address not long ago to the Institute of Transport, one of the most formidable obstacles to be overcome was "so to vary the conference arrangements of shipowners engaged in running regular lines of steamers to India, China and the Far East, to Africa, Australia, New Zealand, and South America that Manchester might freely be used as a loading port for those trades, instead of, as is now the case, being absolutely barred with the exception of Bombay, Australia, and, more recently, Calcutta. Those conference arrangements were, for the most part, fixed before Manchester became a port."

This conference obstacle was mentioned during my talk with Mr. Stevens, referred to at the beginning of this chapter. Some of the principal oversea conference lines still do not use the port. That is not to say that Manchester does not trade directly with all parts of the world; it does—importing produce and exporting manufactured goods—and the fact should be made clear that it is only on some routes that the conference lines do not load at Manchester. Conference steamers load there regularly for Australia, India, the United States, Canada, Mediterranean and other ports.

These matters are more or less common knowledge, but a further point which Mr. Marshall Stevens emphasised is that Manchester is one of the few ports—the others are London, Liverpool, and Glasgow—where the traffic is sufficiently large

and varied to provide regular cargoes of mixed general merchandise for long distance overseas trade.

Ever since the Ship Canal was opened, Manchester has been contending with vested interests, and only step by step have the existence of the advantages which the port offers and the work of calling attention to those advantages increased the trade. Many steps have, however, now been taken. It may fairly be said that the Ship Canal Company has established its undertaking on a firm basis. Its affairs are in the hands of capable men, and, as trade gradually revives after the set-back of the war, much further progress may be achieved.

# IX.—GLASGOW

THE secret of writing so as to drive facts and conclusions home is, I have been assured, to assume that the reader is almost as great an ignoramus as one's self. This may very well be an open secret. In approaching a wide subject it is permissible—even necessary—to recall some things which, as the classic phrase runs, every schoolboy knows. Accordingly, in this chapter descriptive of Glasgow and the Clyde, as in other chapters of this book, I venture to begin more or less at the beginning.

The essence of the story of the Clyde was put into a couple of sentences by an eminent French engineer, and, though M. Simonin wrote over forty years ago, he so vividly expressed the spirit of the achievement he described that, despite the further march of events, his words are admirable still: "Nowhere as at Glasgow is there revealed in such luminous traits all that can be done by the efforts of man, combined with patience, energy, courage, and perseverance, to assist Nature, and if necessary to correct her. To widen and deepen a river previously rebellious against carrying boats; to turn it into a great maritime canal; to bring the waters where it was necessary to bring the largest ships; and, finally, to gather a population of 750,000 inhabitants, all devoted to commerce and

industry, upon a spot where only yesterday there was but a modest little town almost destitute of every species of traffic—such is the miracle which in less than a century men have performed at Glasgow." Almost the only correction needed in this description to make it applicable to the conditions of to-day is the substitution of a million as the number of the population. The figure in 1801 was 84,000. In 1901 it was nine times, and now it is twelve times, as great.

The explanation of the miracle, if there is an explanation, may be found partly in the character of the people who breathe this keen northern air and partly in their natural surroundings. Without an extensive field of coal and ironstone in its neighbourhood Glasgow would scarcely have become the commercial Metropolis of Scotland, nor would the Clyde have been converted into a great shipbuilding and shipping river; but, equally, these changes would never have been accomplished had the people lacked the quality of mind which they possessed.

### The Beginnings

In the beginning, however, Glasgow had no connection with iron or coal or sea trade. It was a settlement round a cathedral in the Clyde Valley, some eighteen miles above the point where deep water ended. The building of a bridge tended to the expansion of the settlement down the side of the valley towards the river—along the line of the present High Street—but the river itself was not

navigable, and had little to do with the growth here of a market town. Till beyond the middle of the seventeenth century the nearest port was at Irvine, away on the Ayrshire coast, forty miles distant.

In 1668 the magistrates of Glasgow, having met with opposition to their project of forming a harbour at Dumbarton, built one at Port Glasgow, on the opposite bank of the Clyde lower down, eighteen miles west from the city. The trade then was small, but after the union of Scotland with England in 1707, Glasgow, besides Bristol and Liverpool, traded with the American colonies, and did a large business in tobacco and sugar, attaining the lead in the tobacco trade, which in more recent years has passed to Liverpool, as we have seen. The centre of the city moved a little westward, Jamaica Street, which still leads to Glasgow Bridge, becoming the principal thoroughfare. The American War of Independence, which began in 1775, interrupted the Transatlantic trade, but by this time industrial development had commenced.

Defoe, in his description of Glasgow at the beginning of the eighteenth century—an account of a "city of business" which was already an important centre of shipping and manufactures—noted that Port Glasgow near the Clyde's mouth was a harbour for ships of the greatest burden. "Here it is," he remarks, "on a good wharf or quay the merchants load and unload. Their Custom House is also here, and their ships are here repaired, laid

up, and fitted out either here or at Greenock, where work is well done and labour cheap."

The construction of the harbour at Port Glasgow had not solved the problem of deepening the river, and this was not tackled in earnest till towards the end of the eighteenth century. At that time the discoveries and developments in the iron industry which were to change the face of the country in South Wales, the English Midlands, and the Scottish Lowlands were going forward. The scarcity of wood for charcoal had compelled iron manufacturers to search for other fuel. Though coal was not suitable for use in smelting, it had been discovered that coal converted into coke was. Accordingly, in localities such as the country between the Forth and the Clyde, where coal and ironstone were to be found together, the iron industry began to grow. The famous Carron Works near Falkirk were established in 1760. Development, however, was slow. So late as 1772 iron was imported into the Clyde for manufacture and export. By 1788 there were only eight furnaces in blast in Scotland, of which four were at Carron. By 1796 there were 17 in Scotland out of 124 in the whole of Great Britain. Nevertheless, the start on lines which led directly to the industrial growth of recent times had been made, and, as local industry and commerce expanded, the work of improving the Clyde received the attention it demanded.

### River Improvement

The first Act for the improvement of the Clyde was passed in 1759, and another in 1770, but at the second date the channel of the Clyde could still be crossed on foot at Dumbuck Ford, more than twelve miles below Glasgow. No wonder that the *Comet*, the first steamer which was used to navigate the Clyde, which began to carry passengers in 1812, often grounded, though drawing only four feet of water.

Deepening, widening, and straightening—mostly by means of dredging—went on all through the earlier part of the nineteenth century, and by persistent effort the river and harbour have been enlarged to their present capacity for shipping.

The present Clyde Navigation Trust was constituted by an Act of 1858. Its members include municipal and commercial representatives, as well as payers of dues. Its jurisdiction extends over the Clyde between the city and Port Glasgow, eighteen miles away. Throughout its whole length the bed of the river has been deepened, partly by rock blasting, but mainly by dredging, and now, as Mr. D. M. Macintyre, Assistant Secretary to the Trust, points out in his contribution to a recently published volume containing a collection of papers on the City of Glasgow: "The depth of the channel is 25 feet at low water and 35 feet at high water, so that, while the smaller vessels can

navigate at any state of the tide, vessels which, not so long ago, took two tides in their passage, can now leave Glasgow about two hours before high water, drawing 30 feet, and reach Greenock in one tide either by night or day, the river being provided with lighthouses and gas buoys of the most modern kind. Widening of the channel has been effected from time to time, often involving the purchase of land much enhanced in value by the Trustees' own operations. It is this great work which, more than any quay facilities, has made the port what it is to-day, and has besides made it possible for shipbuilding yards to spring into being capable of producing and launching huge liners and warships such as the *Aquitania* and the *Hood*. The reflex influence on trade has been most marked. Small vessels, which were legion forty years ago, bringing cargoes of a few hundred tons, are now but a memory. Steamers for Australia now leave with 12,000 tons under hatches, and only the other day a steamer arrived with 10,000 tons of wheat."

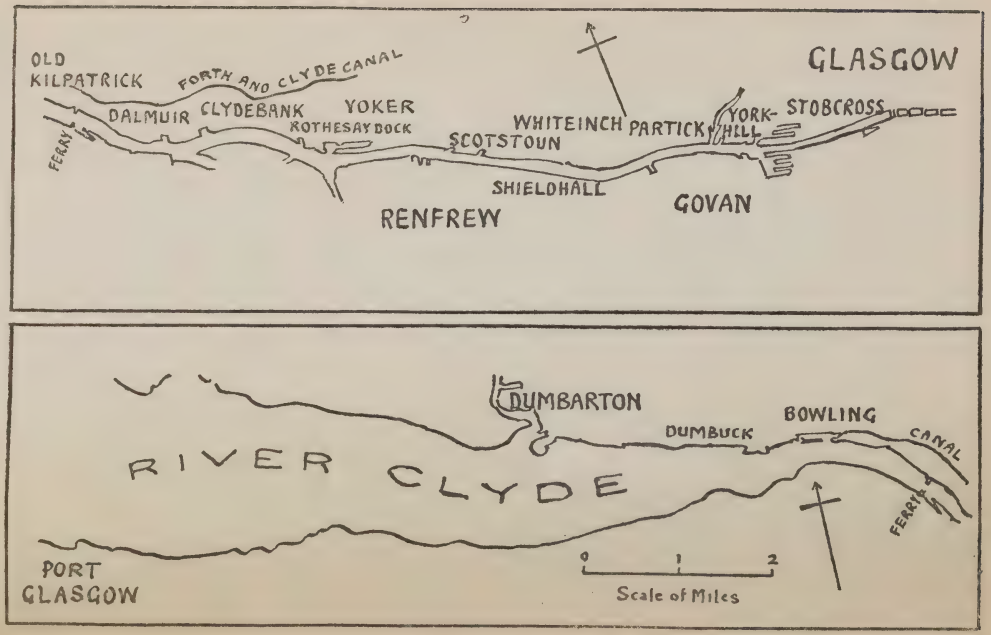
Mr. Macintyre, from whose paper this extract is taken, is, as the result of a lifelong study on the spot of the growth of the Port of Glasgow, an authority upon the subject. I am much indebted, both to his most informing account of the port and its development, and to him personally, for some further particulars.

## The Dock System

At Broomielaw, in the heart of Glasgow, where now there is extensive deep-water berthage, there was, when Port Glasgow was made down river, only a shallow stream, and alongside it one little quay, to which small craft came up from the lower reaches. Until 1818, it is recorded that no vessel in the foreign trade came up to Glasgow, but with the introduction of steam navigation, first adopted, so far as this side of the Atlantic is concerned, on the Clyde, developments took place, and first of all riverside quays and afterwards docks began to appear as the long process of deepening the river went on and trade increased.

The rise of tide in the river is some ten or twelve feet, and the policy pursued has been to build riverside quays and open tidal docks, the dock gates adopted in ports where there is a larger rise of water not having been found necessary. To make references to various localities clear, it should be noted here that the sequence of places below Glasgow on the north side is Stobcross, Yorkhill, Partick, Whiteinch, Scotstoun, Yoker, Clydebank, Dalmuir, Old Kilpatrick, Bowling and Dumbarton. On the south side are Govan and Renfrew, and, lower than Dumbarton, Port Glasgow, and Greenock. These places, with the exception of the last-named, will be found marked on the accompanying sketch plan of the river.

Kingston Dock, on the south side at Glasgow


OLD
KILPATRICK
FORTH AND CLYDE CANAL
GLASGOW
DALMUIR
CLYDEBANK
YOKER
ROTHESAY DOCK
WHITEINCH
PARTICK
YORK-
HILL
STOBCROSS
FERRY
SCOTSTOUN
SHIELDHALL
RENFREW
GOVAN
DUMBARTON
BOWLING
DUMBUCK
CANAL
RIVER CLYDE
FERRY
PORT
GLASGOW
0 1 2
Scale of Miles

RIVER CLYDE.

itself, with an area of about five acres, was the first dock made. It was opened in 1867, when the total tonnage of goods imported and exported was 1,600,000—one-sixth of the figure reached just before the war. Queen's Dock, on the north side at Stobcross, with an area of nearly 34 acres, was opened in 1880. Prince's Dock, opposite to it, was partly opened in 1890, and completed some years later. It is 35 acres in extent. These are now the principal Glasgow docks, and, with the river quays in the neighbourhood, accommodate the various liners trading to the port. In 1907 Rothesay Dock at Clydebank, six miles below Glasgow, was opened for the shipment of coal and the ore traffic, though there are also coaling appliances at Queen's and Prince's Docks. Rothesay Dock has a water area of nearly 20 acres.

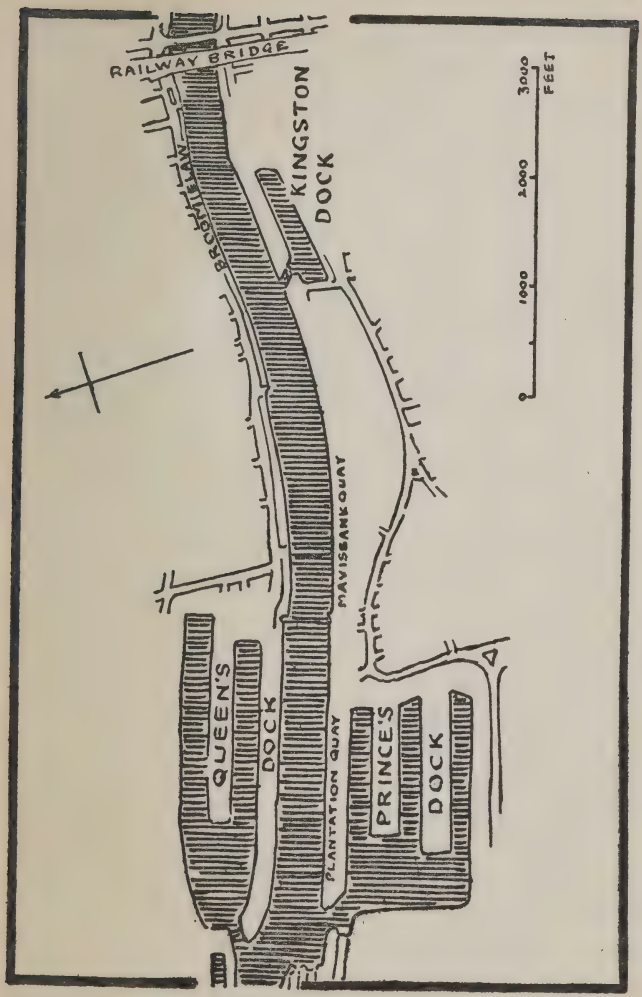
The system at Glasgow is to deal as far as possible with each class of trade at a different part of the harbour, and as to mineral traffic apart from bunkers, now mainly concentrated at Rothesay Dock, it may be interesting to mention at this point that just before the war four out of the seventeen million tons of coal raised yearly in the Lanarkshire coalfield were shipped at Glasgow. The ore traffic has grown greatly. The exhaustion of the local ironstone, and changed methods of making iron and steel, led to the importation in large quantities of hematite ore from Spain and other places. For the purpose of dealing with this mineral traffic, Rothesay Dock, with a mile of quayage, is

equipped with coal hoists and ore-discharging cranes.

There is a scheme of dock extension at Shieldhall, Renfrew, which, so far as the acquirement of land and other preparatory measures go, has been in hand for a number of years, but this matter belongs more properly to the future, and it will perhaps be convenient to defer reference to it till later.

### The Quays

In improving the river, and for capital purposes generally, the Clyde Trust has spent over £10,000,000, and now possesses eleven miles of quayage capable of accommodating ships drawing up to 28 feet at low water. In pursuance of the system already mentioned of localising the various trades in different parts of the port, berths are allocated to regular steamers. Thus, in the upper part of the harbour two miles of quays are set aside for coasters. The coasting and cross-channel trade is an important feature of the business of the port and has been so since early days. The first steamers were coasters, as will appear when we come to that part of the story. A point which no one can fail to notice is the absence from Broomielaw and these up-river quays of railway lines. Three-fourths of the general traffic of the port, I am told (apart, that is, from mineral traffic and so on), is carted by road. The explanation apparently is that the goods are mainly for local distribution, though a proportion which is carted between the quayside and the




UPPER PART OF GLASGOW HARBOUR.

railway is handled more than would be the case were the rails alongside the ship.

The overseas liners, berthed at the quays and docks in the lower part of the harbour proper, maintain regular communication with all the principal ports of the world—in Europe, the Far East, and also in North and South America. Below the docks on the north side are the Yorkhill, Meadowside, and Merklands Quays. The grain trade is dealt with at Meadowside, where in 1914 the Clyde Trust opened their huge granary, with a capacity of 31,000 tons, equipped with all necessary appliances. To elevators on the bucket system a suction elevator has recently been added. Merklands Quay is for cattle.

Timber is for the most part discharged at Shieldhall, where there are large storage grounds, though this traffic is dealt with also in other parts of the port. Minerals, as already noted, are handled at Rothesay Dock, which is amply provided, in addition to the loading and discharging appliances, with railway sidings.

The oil depôt, now becoming a feature of every large port, is some distance down the Clyde at Bowling. The Admiralty Oil Wharf was the first constructed, but there are now in addition other oil wharves. Facilities are provided for oil bunkering, either at the oil wharves themselves or by means of barges, which carry the oil to the ships at their ordinary berths. The trade has grown, and, according to the statistics issued by the Clyde

Trust, over 200,000 tons of oil were handled in the year ending at June, 1922.

Owing doubtless to having been weakened by the continued dredging, some of the older quay walls at Glasgow Harbour gave way in 1917, sliding forward into the river. These occurrences were at Plantation Quay on the south side, and Anderston Quay on the north. The work of reconstruction has been carried through in such a way as to provide new structures of great strength. Plantation Quay has been built about 30 feet farther out into the river, and the adjoining quay at Mavisbank is being made to coincide. This will allow of wider quays and sheds.

No bridge crosses the Clyde below the Caledonian Railway Bridge at Glasgow, but communication is carried on by means of a tunnel and a number of ferries.

### Coasting Trade

The course of the development of Glasgow's shipping business has already been to some extent indicated. Though the maritime commerce of the city was important in sailing-ship days, the deepening of the Clyde so that sea-going ships could come to Glasgow itself was mainly the work of the years following the introduction of steam navigation, and therefore the story of Glasgow vessels is in the main that of steamships. The association of Glasgow with the steam engine needs to be recalled only to complete the outline of events. It is matter of

history that James Watt, of Glasgow, made the steam engine a practicable machine, and that the journeys of Henry Bell's *Comet* up and down the Clyde were the first practical application in the old world of steam power to navigation.

Within a year or two after 1812, when the *Comet* began to carry passengers on the Clyde, several other steamers appeared on the river. One of them, the *Industry,* was running on the Clyde in 1814, and was afterwards acquired by the Clyde Shipping Company. Others, including the *Britannia,* were also shortly afterwards in use, and the last-mentioned vessel is stated to have been the first steamer owned by the founder of the Laird Line. Both this concern and the Clyde Shipping Company claim to be the oldest steamship company in the world. I have talked with gentlemen engaged in the management of the respective companies about the point, and, while I was happy with each in discussing the doings of earlier days, I should have been happier with both together. Their friendship for each other would not have suffered, though I am sure neither would have convinced the other of a mistaken view. The evidence of old newspaper advertisements is imperfect, and the inferences able to be deduced are very inconclusive. In any event, both businesses are very old-established, and any difference in their ages is but small.

The Clyde Shipping Company can in any case claim the distinction—rather a rare one in these days of amalgamation—of having been carried on

since its inception under the same style. The proprietors necessarily changed from time to time while it was a partnership, and it is now a limited company, but the name has not been altered. Established in 1815, the company's business was at first confined to the transport of goods between Greenock and Glasgow, as ocean-sailing vessels of that period were unable to proceed beyond Greenock and Port Glasgow. The fleet at that time consisted of tugs and lighters. The company's first vessel was the paddle steamer *Industry*, already referred to, an interesting oil painting of which hangs in the offices at Glasgow. With the deepening of the river to Glasgow, the Irish trade—from the Clyde to Cork and Waterford—was started in 1857, and subsequently, in 1868, services were inaugurated between Glasgow and Belfast and Plymouth and Southampton, goods being forwarded from the last-named port by rail to London. The development of direct sailings to London took place in 1884. At present the steamers sail to and from London, carrying passengers and goods to Waterford, Limerick, Belfast, Greenock, and Glasgow. The company has also services between the Clyde, Cork, Waterford, Limerick, Plymouth, and Southampton. In addition there are sailings between Liverpool and Waterford and between Bristol Channel and Waterford. The company still maintains the towing part of its original business and has a large fleet of tugs working on the Clyde and at Queenstown.

The well-known and old-established shipowning firm of G. and J. Burns, of Glasgow, was recently amalgamated with the Laird Line to form the Burns and Laird Lines, Ltd. The combined lines now run services carrying both goods and passengers each way between Glasgow and Belfast, Dublin and Londonderry. These are its principal services, but it also maintains regular communication with some of the smaller Irish ports for the carriage of goods, and runs a passenger service between Heysham and Dublin and Londonderry.

The Burns-Langlands services of the Coast Lines, Ltd., connect Glasgow and Greenock with Liverpool and Manchester, while William Sloan and Company's steamers run between Glasgow and Belfast and Bristol Channel ports, and those of David Macbrayne, Ltd., along the west coast of Scotland.

Thus out of the fleet of tiny steamers which used at first to limit their movements to the Clyde and its vicinity has developed the extensive coasting and cross-channel traffic which to-day is an important feature of the trade of Glasgow.

### Overseas Trade

The overseas shipping trade of Glasgow may be said to have grown out of the same small mechanically propelled craft which began to increase during the first quarter of the nineteenth century. As we have seen, the original interest of the city in maritime commerce was maintained from

a distance, as no ships in the foreign trade came up the river, but, as time wore on through the thirties and forties, the smaller ocean-going ships were able to come right up to the city quays. Sailing vessels were still to the fore, but those were the days when steam was making its way in ocean navigation. Business was relatively small and decidedly slow until the era of steam had fully come. The Kingston Dock, the first opened at Glasgow, was, Mr. Macintyre records, authorised in 1840, but it was not opened until 1867. At that later time "there was a considerable number of sailing ships in the foreign trade; and Kingston Dock, with its sheds of 35 feet wide, soon became the haven where the wooden barques trading to the West Indies and Rio shipped their sugar-plant and cast-iron pipes, and the more modern ships filled up for Sydney. The process took many weeks. The Blue Peter was shown only when they were full, and their departure was a public event."

The liners which then traded to Glasgow had their berths in the river. Some of the regular lines which have been associated with the Clyde—the Allan Line, for instance—had begun with sailing ships, but had changed to steam. In the period immediately succeeding that just referred to, the Anchor, Allan, and City Lines had their regular berths at Glasgow, as had also Messrs. P. Henderson's steamers. The last-mentioned firm is, I believe, the only old-established Glasgow concern engaged in foreign-going shipping which has not been amal-

gamated with any of the large combines. Their steamers still, as in the old days, trade to Rangoon.

The overseas trade increased more rapidly than the port accommodation, and when Queen's Dock was opened in 1880 it was ready none too soon. The Clan Line, another service intimately associated with Glasgow, was started in the late seventies. The trade of the port continued to grow, and filled Prince's Dock also. This was partially opened in 1890, but not completed till seven years later.

To-day the steamship lines from Glasgow traverse all the principal trade routes of the world. To the Far East sailings are maintained by Holt's Blue Funnel steamers, the Nippon Yusen Kaisha, the Anchor-Brocklebank Line, the Henderson Line before referred to, the Anchor Line, Ellerman's Hall and City Lines, and their joint service with the Strick Lines, Gellatly, Hankey and Co., and the Australian Commonwealth Government steamers. The Moss Line and other companies run to various European and Mediterranean ports, while to Africa there are the sailings of the Clan, Ellerman, and Harrison Lines. Across the Atlantic run the Canadian Pacific steamships, and to the United States those of the Donaldson and Furness Lines. The Harrison Line trades to Central American ports, and the Houston, Gulf, Lamport and Holt, and Donaldson Lines to various ports in South America.

## Growth of Business

The progress of the total trade of the Port of Glasgow may be studied in the record of total tonnage (inwards and outwards) of vessels and total tonnage of goods imported and exported kept by the Clyde Trustees from the time of their establishment. In this table each year ends on June 30.

| Year. | Tonnage of Vessels. | Tonnage of Goods. |
|---|---|---|
| 1858 | 2,129,782 | 1,154,798 |
| 1860 | 2,897,738 | 1,192,475 |
| 1870 | 3,764,220 | 1,921,221 |
| 1880 | 5,768,102 | 2,653,088 |
| 1890 | 6,728,990 | 4,794,562 |
| 1900 | 8,723,194 | 7,215,368 |
| 1910 | 12,354,788 | 10,097,283 |
| 1913 | 13,461,059 | 10,418,324 |
| 1920 | 10,180,608 | 7,028,020 |
| 1921 | 9,785,893 | 5,821,839 |
| 1922 | 11,807,274 | 6,021,375 |

The final figure of 6,021,375 tons comprised 2,306,762 tons imported and 3,714,613 tons exported. As between foreign and coastwise, the same total of 6,021,375 tons is made up of 4,377,686 foreign and 1,643,689 coastwise.

A comparison of post-war with pre-war figures in the above table shows that the proportion between space tonnage of ships and weight tonnage of goods has materially altered. The goods figures have dropped much more than the ship figures. The statistics indicate not only the amount of leeway to be made up, but also that in the meantime the ships are running by no means fully loaded, as, indeed,

has been the experience in general. Comment upon this was made at the annual meeting of the Clyde Trust in September, 1922, by one of the members, who pointed out that there had been an additional revenue on vessels, with a fall in revenue on goods, a position which was, he said, attributable to the number of vessels sailing light or with only part cargoes. The tonnage of vessels had approached to 85 per cent. of the tonnage dealt with in 1914, whereas the tonnage of goods was only 61 per cent. of that dealt with in the pre-war years.

Normally the principal imports are ore, grain, flour and other produce, and timber. Among exports, coal, iron and steel, and machinery bulk most largely.

### Shipbuilding

In the same way that mention of Newcastle or Cardiff brings coal instantly to mind, that Manchester suggests cotton, or Grimsby fish, the Clyde stands for shipbuilding. The Clyde is responsible for roughly one-third of the total output of new tonnage in this country. Its proportion stood at about that figure before the war, and remains very much the same. In relation to world output the Clyde proportion has fallen with the recent great increase of shipbuilding in America. It used to be between one-fifth and one-sixth. Since the war this district builds only one-tenth of the world's output.

These are elementary figures which I should have hesitated to introduce here had it not been that,

when recently revisiting Glasgow, I found that several people, of whom I asked the proportion, were unable to give me the figure. My surprise reached a climax when, on repeating the question to an official of a leading Clyde shipbuilding firm, he offered to inquire and send me the information later. Of course I did not wish to trouble him to that extent, and to carry the conversation into an easier channel, I turned to the subject of notable ships, casually mentioning the *Aquitania*.

He had of course heard of this vessel, but where was she built? A colleague whom he consulted surmised that the Tyne was the place.

At this stage I mentally resolved to entertain no doubts on the question, and, by reference to Lloyd's Register, have since found that the *Aquitania* was built in 1914 by Messrs. John Brown and Company at Clydebank, and is a vessel of 45,647 tons gross, being, in fact, the second largest British-built vessel in the world.

If one entertains surprise that so notable an event as the launch of the *Aquitania* failed to impress itself, it should perhaps be remembered that on the Clyde the launch of a ship of some kind is, in normal times, almost literally an every-day event throughout the year. A launch is a commonplace. There is in the Glasgow Art Gallery a picture of one of these launches. The hull is just entering its element, wreathed and half hidden in the drifting masses of smoke and steam from the tugs, which are churning the water into white as they take the

great ship in hand. High above all else—a dash of colour against the low tones of the sky—floats, over the stern, the merchant flag of Britain, while on the stern itself can be read the name *Lusitania*. A commonplace scene perhaps, but charged, when now recalled, with poignant feeling.

### Industrial Details

The figures denoting the shipbuilding output of the Clyde for half a century past are an interesting study. Up to the outbreak of war in 1914 they fluctuated, but on the whole showed a growing business. From about 200,000 tons the figure rose to over 750,000 in 1913. At the end of the seventies the yearly total began to increase, till in 1883 it exceeded 400,000 tons. Then it fell heavily, but with ups and downs rose to 620,000 in 1907. Again a big drop followed, but the output figure climbed again to the record of the year before the war. The years since are a melancholy memory. The Clyde output for 1920 was the largest in any year except 1913, but, in the light of later knowledge, the activity which then temporarily prevailed appears as a feverish rather than a healthy state of affairs. The output of the district for the last three years, as recorded in the *Glasgow Herald*, has been : 1920, 672,438 tons; 1921, 511,185 tons; and 1922, 388,481 tons.

The shipbuilding and engineering industry of the Clyde has developed, like the trade, since the improvement of the river was taken in hand, and

many of the great shipyards have acquired world-wide reputations. Names like those of William Beardmore and Company, Harland and Wolff, John Brown and Company, Barclay, Curle and Company, Lithgows, the Fairfield Company, and others are known far and wide. These are only a few, and the list is a long one, including Hamilton of Port Glasgow, Denny of Dumbarton, Scotts of Greenock, Yarrow and Co., and others. Some firms, like William Simons and Co., and Lobnitz and Co., both located at Renfrew, specialise in particular types of vessels, the two firms mentioned devoting their attention mainly to the construction of dredgers and like craft. And so one might go on through half a hundred names of shipbuilding firms in the Clyde district, in addition to the establishments devoted to marine engineering. Messrs. Beardmore's naval construction works at Dalmuir, it is interesting to note, now cover, including their recently laid out East Yard, an area of more than a hundred acres.

Some firms combine both shipbuilding and engineering, and a number have their own tidal basins for fitting out ships after launching.

Almost needless to say the Clyde has excellent repairing as well as building facilities. There are various dry docks and repairing slips. Three of the dry docks belong to the Clyde Trust, and one of these is 880 feet in length.

### Dock Extension Scheme

For a number of years the Trustees of the Clyde Navigation have had in contemplation the carrying out of a large scheme of harbour extension. This was already in hand when the outbreak of war in 1914 necessitated its execution being put on one side. Its scope has since been widened, and, as now proposed, the scheme will include the construction of very large additional docks on land bought for the purpose at Shieldhall and Renfrew, and having a frontage of two miles to the river.

The first purchase of land at Shieldhall for this purpose was made forty years ago. More recently further land has been bought, and the dock extension site now comprises over 600 acres. In moving the adoption of a recommendation for the purchase of land to complete this site at a meeting of the Clyde Trust in April, 1921, the Chairman, Sir William H. Raeburn, M.P., said that the Trustees had always been hampered by lack of sufficient accommodation for shipping. Their docks had been too circumscribed, and he thought it was wise on their part to look forward to the time when still more accommodation would be necessary, and when still larger vessels would be calling for berthage. Accordingly the Trustees are going forward with their scheme for a number of large docking basins pointing at an angle down the river, but it will be a number of years before all the additional docks can be ready for use.

In connection with this scheme there has recently been much discussion among the various sections of the local shipping community upon the question raised by Mr. Bruce Murray, one of the members of the Trust, as to the feasibility and effect of the construction of a barrage or lock on the river. The possible bearing of the construction of a barrage upon the Shieldhall Docks scheme and upon the reconstruction of the quay walls (already referred to) and the deepening of the river was very fully investigated by a special committee of the Trust. The matter was reported upon by Mr. Frederick Palmer, the Consulting Engineer, and Mr. P. D. Donald, the Engineer to the Trustees, and was fully reviewed by the Chairman at a meeting of the Trustees in May, 1922.

In submitting a motion approving of the Special Committee's recommendation, which was adverse to Mr. Bruce Murray's suggestion of a barrage for the river, the Chairman of the Clyde Trust pointed out that the trade of the port had developed marvellously on the principle of the open river and open docks. He did not admit the physical advantages claimed for a barrage, and showed that the financial aspect of the scheme made it impracticable. Mr. Bruce Murray moved for a continuation of the investigations, but found no seconder, and so the traditional principle and policy of the Trust was affirmed. Glasgow, like Southampton, adheres to open tidal docks and quays.

### A Single Authority?

A year or two before the war, when part of the extension scheme just dealt with was expected to be carried out by the construction of a large dry dock at Renfrew, the late Lord Inverclyde wrote to the then Chairman of the Clyde Trust, Sir Thomas Mason, urging that the project of acquiring the Greenock harbour undertaking should be seriously considered before the dry dock scheme was proceeded with. There was some question as to where a very large dry dock could best be located, and also a point as to the possibility that Greenock might go on with schemes which might or might not fit in with the future development of the Clyde as a whole. Inferentially this also raised the question of the control of the waterway between Glasgow and the sea. The jurisdiction of the Clyde Navigation Trust, the principal authority, has never extended below Port Glasgow. Farther down the Clyde was within the area of the Clyde Lighthouse Trust, while both above and below the dividing line between these two jurisdictions, the Clyde Pilot Board regulated the pilotage service of the district, and in the Firth the navigation in general. In addition there were the Greenock Harbour Trustees, the Port Glasgow Harbour Trustees, and the Dumbarton Harbour Trustees. The Clyde Pilot Board has since been reconstituted as the Clyde Pilotage Authority, but otherwise the position appears to be substantially the same

as when the question—in effect the question whether there should not be a general conservancy authority for the Clyde—was raised by Lord Inverclyde, who was, of course, as the principal director of G. and J. Burns, Ltd., and in other ways, intimately associated with Clyde shipping.

A question which had already arisen between the local authority at Renfrew and the Clyde Navigation Trustees had illustrated how policies might be divergent. In the face of opposition from the Clyde Trustees, the Burgh of Renfrew had, in 1899, obtained power to enlarge its harbour by the construction of a dock. Subsequently, in 1905, the Clyde Trustees had bought up the whole Renfrew harbour undertaking, and the proposed dock was not proceeded with.

It may be that the question which remains unanswered is of little consequence. The Clyde Navigation Trustees exercise the principal jurisdiction, and the fact that some of the members of that body are also members of other public bodies interested in the river may operate to prevent any clash of policy. It is noteworthy, however, that a Conservancy Board was established by an Act passed in 1921 for the Firth of Forth. The circumstances there are undoubtedly different from those of the Clyde, and a closer analogy might be drawn between the Clyde and the Humber before the establishment of the Humber Conservancy Board. In that comparison also there are, of course, points of difference between the two localities and the

authorities, but, apart from analogy or precedent, the problem of constituting a single authority concerned with the whole estuary of the Clyde is one which may have to be considered.

### Notable Names

Greenock, which has been incidentally mentioned from time to time, was originally a fishing village, but now has its own harbours, dry docks and shipbuilding yards, as well as a variety of other industries. Both the quays and the Prince's Pier have railway connections. Historically the most interesting association of Greenock is with the name of James Watt. The inventor of the modern condensing steam engine was born here in 1736 and lived to see his engine adopted for the purposes of navigation.

In connection with the district there is one other name at least which cannot be passed without mention. The activities of Sir William Thomson, who, in his later years, became Baron Kelvin of Largs, were exceptionally varied. His studies and inventions in matters connected with the sea are, however, perhaps those by which he is most widely known. The range of his work included submarine telegraphy, the mariner's compass, sounding apparatus, tide gauges and many other things, and in Glasgow, where, for the greater part of his life, he was Professor of Natural Philosophy at the University, the recollection of his genial personality is warmly cherished.

## Railways

Unlike some other ports, such, for instance, as several on the north-east coast of England, Glasgow has no docks owned by railway companies. Its circumstances resemble those of Liverpool. That is, the port facilities belong to and are administered by a public trust, and though the district is situated on the west coast, and in the territory of the North-Western Group (now the London Midland and Scottish Railway Company), the Eastern Group has direct access to it, not by means of running powers merely, but by its own lines.

The principal railways serving Glasgow are the Caledonian and the Glasgow and South-Western, both constituent companies of the North-Western Group, and the North British, a constituent company of the Eastern Group. The Caledonian and North British systems are connected with the quays of the Queen's Dock on the north side of the river. The same two companies have branch lines to Rothesay Dock, lower down on the same side of the Clyde. The railway connections of Prince's Dock are with the lines of all the three principal companies above mentioned.

It would appear, therefore, that the recent grouping of railways will not, at Glasgow, have the effect of doing away with competition, and the trading community of the port will retain the advantages associated with alternative routes.

### Canals

Between Grangemouth on the Firth of Forth and Bowling on the Clyde was constructed, during a period of twenty-two years, the Forth and Clyde Canal, which was completed in 1790. Till it passed into railway hands, and, indeed, for some time afterwards, it carried much barge traffic. For a number of years the project of making a sea-level ship canal along this direct route has been under discussion, along with an alternative scheme for a Mid-Scotland canal following a more northerly and more circuitous route, partly through Loch Lomond.

So far nothing definite has resulted, but it is noteworthy that the alleged strategic value of such a work is apparently now regarded with diminished interest by the Association which exists in order to press the question, and attention is being directed to the commercial aspect of the matter. The direct route, following the line of the present Forth and Clyde Canal, while it would involve a greater expenditure, would pass through important industrial areas, and would seem, for that reason, to be preferable. Alongside the existing canal was constructed, during the period of the late war, a pipeline to carry oil from the Clyde to the Forth. The oil storage depot of Glasgow, it has already been mentioned, is at Bowling, where the canal joins the Clyde.

The Crinan and Caledonian Canals, though less

closely associated with the shipping of the Clyde, are nevertheless of interest. The Crinan Canal was opened three years after the connection between the Forth and the Clyde had been made. Its length is only nine miles, but, cutting across the Mull of Kintyre by means of a series of locks, it saves vessels sailing from the Clyde to the north-west a distance of some eighty-five miles, as compared with the alternative route round the land. Unfortunately, only small craft can pass through this canal, but a committee of the Ministry of Transport which was appointed to investigate its position reported recently that the waterway ought to be maintained in a navigable condition. After traversing the Crinan Canal the north-westerly route passes through the Sound of Mull to the Western Isles, or, by traversing the Caledonian Canal through the chain of lakes across Scotland in a north-easterly direction, a vessel can reach Inverness, and emerge into the Moray Firth and the North Sea.

We shall not, however, on this imaginary journey, follow either the north-westerly or the north-easterly route, but here, where they diverge, among the mountains and lochs made familiar even to those who have not seen them by the pen of William Black, we may pause. Black, who was a native of Glasgow, died in 1898, and close by, on Duart Point, near the entrance to the Sound of Mull, was built in 1901 the grey granite beacon tower which stands as a memorial to him. No

ceremony marked the lighting of the beacon, but, to commemorate the event, Lord Archibald Campbell dedicated some lines to the daughters of the novelist :

Here, 'mid the splendour of the dying day,
We consecrate this light—in love's own way,
In silence all.
It is in silence that the day is born,
It is in silence that the day, well worn,
Sinks into night.
Is't not in silence that deep love is born?
It is in silence that deep grief is borne,
In silence all. . . .

# X.—NEWCASTLE-UPON-TYNE

FOR hundreds of years the prosperity of Newcastle-upon-Tyne has been identified with the coal trade, but, standing on the Quay in the "canny toon," one's thoughts run even farther back to those days when the coal trade was yet to be, and the Romans were busy with their massive works which were the foundation of the future town and port. Their bridge, built where we see the Swing Bridge spanning the Tyne at the end of the Quay, disappeared long ago, but their station on Hadrian's Wall, favoured by its situation on a navigable waterway and in the midst of the coalfield, has developed into the great industrial and commercial centre that we know.

Not even the most casual visitor can escape the impression that this city, set on the steep northern bank of the river, has great traditions. The massive Norman Keep—the once-new castle upon the Tyne—standing out against the skyline, proclaims this as a place of power; and not soldiers alone, but ships, it harboured. The port is one of the oldest in the kingdom. Its Trinity House is of hoary antiquity. The year 1492 is the date assigned to the first appearance of this institution as a corporate body, the brethren having then purchased the site of their House, for which the acknowledgment of

a red rose, if demanded, was to be paid at midsummer for ever. There was also a guild or fraternity, commonly called the hostmen, for the loading and disposing of coal, which, having existed "time out of the mind of man," was incorporated by a charter of Queen Elizabeth in 1600. The hostmen loom large in the early records of the coal trade, but we shall not tarry now over their story.

### Export of Coal

Though Newcastle was from the earliest times one of the chief ports of the Kingdom, it was not until the seventeenth century that great commercial expansion began on the Tyne. Coal was then being sent to London and across the North Sea to Germany and Holland, as well as to France, and hundreds of keels were employed on the river to carry the local product. There is no need to explain to a Tynesider what a keel is—the strains of the "Keel Row" with "childhood's dreams are twined in memory's mystic band"—but, for the benefit of others who may not know, let it be said that a keel is a coal barge of a build peculiar to the Tyne.

From the seventeenth century onwards the use of gradually improving means of mining made possible a greater output of coal, and increasing quantities were shipped from the river, especially to London. In 1650 the exports were about 345,000 tons, in 1700 the figure was 475,000 tons, and in 1775 it was 680,000 tons.

The collieries were within comparatively easy reach of the water, and the transport difficulties which for so long precluded the export of coal from South Wales did not hinder development in the North of England. Waggonways along which the vehicles ran on wooden rails connected the pits with the shipping places. Towards the end of the eighteenth century cast-iron rails were introduced, and, when steam engines began to be used, rope haulage took the place of horse traction before locomotives were adopted.

### Railway Competition

The interest taken by George Stephenson in the first attempts made at Wylam in the Tyne valley—his birthplace—to construct locomotives for the haulage of coal waggons led ultimately, as everyone knows, to the development of our modern system of railways, thanks to the northern grit and determination as well as the inventive genius of this son of the Tyne. By the middle of the nineteenth century railway carriage of coal was competing severely with carriage coastwise by sea, and threatening to supersede it.

At this critical time the historic *John Bowes*, the first steam screw collier, was built on the Tyne by Mr. Charles Mark Palmer. Very few iron ships had then been constructed, and only one had been experimentally provided with water ballast appliances like those of the *John Bowes*. The wooden sailing colliers then trading between the Tyne and

the Thames—brigs and schooners commanded by rough skippers of whose peculiarities Sir Walter Runciman tells in his books—had to take from the Trinity lighters ballast which, before loading coal again, they discharged on the banks of the Tyne (forming great heaps still to be seen in places), the whole process involving great delay and expense. The iron steamer, loading a cargo of 650 tons of coal, saved both time and money, and, in a sense, saved the coal shipping trade of the Tyne from extinction. Palmer's enterprise led, moreover, to the establishment of iron shipbuilding on the river, and ballast tanks, after being found of service in the North Country colliers, were introduced into many merchant steamers.

### Tyne Improvement Commission

Up to this time hardly anything had been done by the Newcastle Corporation, as the ancient conservators of the river, to improve the navigation. Although in the middle of last century the trade of Newcastle, compared with that which other ports then had, gave it a high relative position, the river was still a tortuous, shallow stream, full of sandbanks, while across the mouth was a bar with only 6 feet of water over it at low water springs, and 21 feet at high tide. The entrance was dangerous in rough weather, and winter storms caused many wrecks. There were no docks, and only a few quays and coal staiths. Coal was mostly shipped from the keels which brought it from up-

river to the lower reaches where the ships lay, and often became stranded.

These conditions caused much dissatisfaction, and, as the outcome of an agitation for reform, the Tyne Improvement Commission was established under an Act of 1850. The new body at once set to work. It made, on the north side of the river a short distance above Shields, the Northumberland Dock of about 50 acres (opened in 1857) and began the construction of the two enormous piers of solid masonry stretching out into the North Sea (how often have I walked on them) which have changed the mouth of the Tyne from a place avoided by mariners in bad weather into a harbour of refuge. The foundation stones of both piers were laid in 1854 by Mr. (afterwards Sir) Joseph Cowen (who was then and for many years chairman of the Commission), and their construction occupied over forty years.

### River Improvements

The construction (on the south side of the river) of Tyne Dock, 50 acres in extent, was completed by the North-Eastern Railway Company soon after the Northumberland Dock had been opened. Meanwhile, with the increasing size of ships, the need for deepening and straightening the river had become very urgent, and was taken in hand by Mr. J. F. Ure, the engineer to the Commission. An immense quantity of material was dredged and carried out to sea, and points were removed at

THE BRIDGES, NEWCASTLE.

bends in the river. The old Tyne Bridge was taken down and replaced by the present swing bridge, which was opened for river traffic in 1876. Since then the construction of the Albert Edward Dock (22¼ acres) and the completion of the piers, with continued dredging, have been the work of the Commission. Dredging operations have not been confined to the ten miles between the sea and Newcastle, but have been carried on also above the swing bridge and the high-level bridges past the Dunston staiths on the south side (opened in 1893 by the North-Eastern Railway Company), the Derwenthaugh staiths (opened in 1898 by the Consett Iron Co., Ltd), and the Armstrong Works on the opposite bank at Elswick to Scotswood and beyond. Between eleven and twelve millions were spent in the process of modernising the port down to the time when the formal opening of the piers in 1895 marked the completion of the main constructive work of the Tyne Improvement Commission.

In the meantime the quay at Newcastle was rebuilt by the Municipal Corporation and provided with railway connections, while the Gateshead Corporation constructed a quay on the opposite side of the river.

### Shipbuilding

Though sailing vessels had been built on the Tyne for generations, and the river already had a great reputation in this respect, it was the building of the *John Bowes*, already referred to, which led

to the great expansion of this industry in more recent years. That historic steamer, it is interesting to note in passing, became, according to Lloyd's Register, the property of a Norwegian in 1898, and was renamed *Spec*. After 1900 she ceased to figure in the Register Book.

Palmers, Coutts, Smith's, Leslie's, Mitchell's, Wigham Richardson's, Swan and Hunter's and Readhead's shipyards were among the pioneers in the march of progress which has made the Tyne and neighbouring ports on the north-east coast one of the chief shipbuilding centres of the world. Most of the names mentioned are still associated with the river in the titles of the shipbuilding firms of the present day.

In the building of special types of steamers perhaps the most notable development was the evolution, by a series of experiments in Tyne yards, of vessels for carrying oil in bulk. In the production of oil tankers the famous Armstrong firm took, as is well known, the principal place from the inception of this type in the eighties. The pioneer oil tanker, the *Gluckauf*, was launched at the firm's Walker yard in 1886. Armstrongs have completed altogether over a thousand vessels, of which eight out of ten have been passenger and merchant vessels.

A number of times in recent years Messrs. Swan, Hunter and Wigham Richardson, Ltd., have had the largest output in the world of any individual firm.

The following figures show that the shipbuilding

output of the Tyne attained its maximum the year before the war. Some other figures are given for comparison.

| | | Tyne. | N.E. Coast. | Whole Country. |
|---|---|---|---|---|
| | No. | Tons. | Tons. | Tons. |
| 1910 ... | 78 | 249,912 | 654,789 | 1,322,886 |
| 1911 ... | 123 | 436,406 | 1,071,743 | 2,042,928 |
| 1912 ... | 93 | 397,791 | 1,065,295 | 2,137,047 |
| 1913 ... | 100 | 441,826 | 1,172,058 | 2,336,308 |
| 1920 ... | 80 | 369,026 | 995,221 | 2,079,216 |
| 1921 ... | 65 | 369,164 | 711,008 | 1,570,975 |
| 1922 ... | 41 | 240,129 | 443,893 | 1,032,720 |

Details of output of north-eastern ports in 1921 and 1922 are as follows :

| | 1921 | 1922 |
|---|---|---|
| Tyne ... ... ... | 369,164 ... | 240,129 |
| Wear ... ... ... | 153,710 ... | 130,847 |
| Tees ... ... ... | 137,309 ... | 40,784 |
| West Hartlepool ... ... | 37,262 ... | 20,833 |
| Blyth ... ... ... | 12,274 ... | 11,300 |
| Amble ... ... ... | 1,289 ... | — |

[The above figures are taken from the returns compiled by the *Newcastle Daily Chronicle*.]

### Engineering

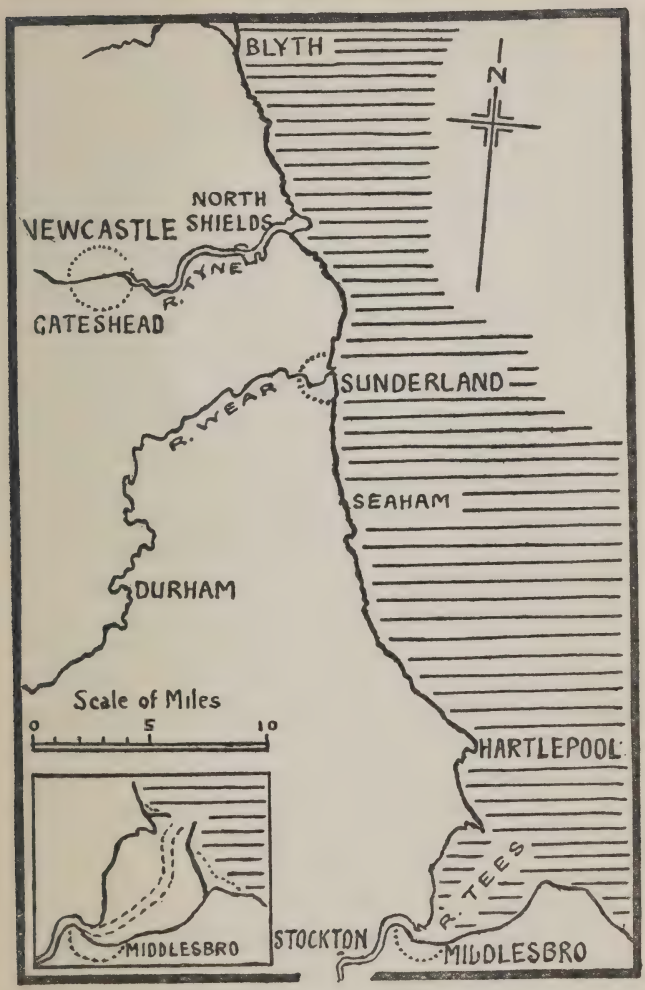
Alongside shipbuilding developed engineering, both marine and railway. It was on Tyneside that the production of locomotives first became an established industry, and the monument in Newcastle to George Stephenson stands as a reminder of how much the engineering industries of the North owe to the vigour of his personality.

On the marine side, the most notable achievement accomplished on the Tyne was undoubtedly the application of the steam turbine to ship propulsion. The tiny experimental vessel *Turbinia* was constructed here by the Hon. C. A. Parsons in the nineties—very well do I remember seeing her in the river at that time—and the wonderful success of the little boat soon led to the wide adoption of turbine machinery both for warships and merchant steamers. The turbine-propelled *Mauretania*, built and engined on the Tyne at Wallsend in 1907, was at that time not only the fastest but the largest ship in the world.

With dry docks and all repairing facilities the banks of the Tyne are, it is almost needless to say, amply provided. In normal times a very great deal of repairing work is done on the river, and only a few of the largest liners are unable to dry-dock here. The *Berengaria*, the largest ship in the Cunard Fleet, and the largest that has so far entered the river (her draught was $33\frac{1}{2}$ feet), after being reconditioned and converted to oil burning in the Tyne during 1922 at Armstrongs' Walker Yard, was dry-docked at Southampton.

### Recent Developments

The fact that the largest class of liner can navigate the Tyne—the *Berengaria* was turned in the river—is evidence of the continued work of the Tyne Improvement Commission. Though, as already indicated, the completion of the North




THE TYNE, WEAR, AND TEES.

and South Piers at the mouth of the river in 1895 brought to an end the initial constructive period, a great deal has been done since. The expenditure to date has been about £23,000,000. In 1897 a tremendous storm, lasting several days, made two serious breaches in the North Pier, and the work of repair took a long time. The policy of dredging has been continued. The low water depth at the bar has been increased from 6 feet to approximately 30 feet, and the channel is being dredged to this latter depth for the first three miles from sea (that is, to the Northumberland Dock), and to 25 feet thence to Derwenthaugh, about fourteen miles from the sea. About 150,000,000 tons of dredgings have been taken out to sea. At the berths alongside Newcastle Quay there is 40 feet at high water of ordinary spring tides, the ordinary rise of tide being about 15 feet.

Increased facilities are being provided by the Corporation at Newcastle Quay, both as regards berths for steamers and shed space. For some time the accommodation has been inadequate, and recently the Tyne-Tees Steam Shipping Company, Ltd., having taken a lease from the Gateshead Corporation of part of the Gateshead Quay on the opposite side of the river, has erected a range of sheds there and transferred to that side part of its Continental trade.

In addition to oil storage at South Shields and at the Albert Edward Dock, a large oil depot, covering 8 acres of land at Jarrow, which has

for some time been in course of construction, has recently been brought into use. Two companies now have large tanks at Jarrow. The Tyne Improvement Commissioners have here built a jetty, and have dredged the berth alongside to a depth of about 30 feet at L.W.O.S.T. for ships of the largest size. Vessels up to 600 feet in length bringing oil cargoes can accordingly discharge at the jetty, and those requiring oil bunkers are dealt with expeditiously, the large supplies of oil ensuring that all demands can be met. There is now in the port tank capacity for about 70,000 tons.

In addition to the Northumberland and Albert Edward Docks, the Tyne Improvement Commission owns five riverside coal shipping staiths at Whitehill Point, near Northumberland Dock, at which large vessels can take full cargoes and bunkers without entering the docks, and proceed direct to sea. The appliances are of the most modern type, and the largest cargo shipped at the staiths is 12,403 tons.

At Tyne Dock, which is mainly devoted to coal shipments, the North-Eastern Railway Company has for some time intended to provide accommodation for general cargo trade, particularly trade with Norway and Sweden, by means of a riverside quay. In fact, a certain amount of the preliminary work necessary has been done, but the completion of the scheme has been deferred pending the return of more settled conditions and revival of trade.

The railway company has also, taking into account the possible need in the future for a high-

level bridge below Newcastle, bought land on the line of the railway, which would be carried across the river to relieve the lines and bridges at Newcastle of through north and south freight traffic.

### Industries

The work of improving the Tyne and increasing its shipping facilities has gone forward concurrently with the general development of the district. From above Newcastle right down to the mouth of the river the gaps between the one-time villages have been filled, and there is now an unbroken chain of industrial towns carrying on a great variety of manufactures on both banks. Besides the shipbuilding and repairing yards and marine and locomotive engineering works there are iron and steel manufactories, blast furnaces, cement, chemical, grindstone, ordnance, lead, brick, paint, chemical manure, hemp and wire rope and creosoting works, timber yards (there are large timber ponds at Jarrow), sawmills, cornmills, potteries, etc. At North Shields the fish quay is frequented by a considerable fleet of trawlers. The general shipping trade—in which Scandinavian business, naturally, is in normal times a prominent feature—is (again one must introduce the qualification, normally) commensurate with the needs and activities of this populous area. Imports and exports of general merchandise totalled, before the war, close on 3,000,000 tons per year.

NORTH SHIELDS.

### Coal Shipments

The shipment of coal and coke remains, however, far and away the most important feature of business on the Tyne. The river traverses the centre of the Northumberland and Durham coalfield, which has been worked longer and more heavily than any other in this country, the output having grown partly in response to the requirements of London and partly in connection with the development of iron manufacture on the Tees. Other north-east coast ports, notably Blyth, have in recent years shown increasing figures of coal shipments, in addition to the steady growth of Tyne business. In the sixties the total quantity of coal and coke shipped foreign and coastwise from the Tyne grew to more than 5,000,000 tons, without including bunkers. In the eighties, including bunkers, it exceeded 10,000,000. By 1913 it had doubled again, and was over 20,000,000.

Since the war, reduced trade has been the order of the day here as elsewhere. Referring to the trade of the port in his annual financial statement at a meeting of the Tyne Improvement Commission in July, 1922, Sir William Noble pointed out that coal and coke shipments during the year 1921 totalled 9,806,495 tons, as against 10,843,051 tons in 1920 and 20,299,955 tons in 1913. It was, Sir William remarked, a hopeful indication that, while in the first six months of 1921 the coal and coke shipments were only 2,735,865 tons, for the six months July to December, after the settlement of

the national coal dispute (which lasted from April to June), the shipments totalled 7,070,630 tons, or at the rate of over 14,000,000 tons per annum, representing 70 per cent. of the shipments in 1913.

This improvement has not only been maintained, but further enhanced. For the year 1922 the coal and coke shipments, compared with 1913, 1920, and 1921, were, in tons:

| | 1913 | 1920 | 1921 | 1922 |
|---|---|---|---|---|
| Coal ... | 19,992,270 | 10,252,828 | 9,623,465 | 18,492,877 |
| Coke ... | 307,685 | 590,223 | 183,030 | 720,240 |

The question where the coal goes is perhaps best answered by asking where it does not go. The old Tyne seaman who declared that the four quarters of the world were "Roosia, Proosia, Memel, and Shields," was the product of an age before manufacturing industry and railways in various parts of the earth had made their full demand on North Country coal. Gas-making is another purpose for which much coal is shipped away, and considerable quantities go also as bunkers. As to the geographical extent of the export trade, the tendency for India and other Far Eastern countries to depend more than formerly on their own resources has necessarily limited the market for coal in that direction.

### Notable Shipowners

In surveying the development of the Tyne no one can fail to note the number of original ideas which have been first put into practice along its banks, and have afterwards been widely adopted. To

those already noted an addition must be made, for, to quote from Mr. R. W. Johnson's most interesting volume, "The Making of the Tyne," "It was at Newcastle-on-Tyne that the mutual principle was applied to the protection of shipowners by the establishment of the Steamship Owners' Mutual Protection and Indemnity Association, and the two national organisations which to-day watch over our great shipping interest—the Chamber of Shipping and the Shipping Federation—both had their origin in Tyneside ingenuity and energy."

In recent years two notable Tynesiders have occupied the presidential chair of the Chamber of Shipping. Both Sir Walter Runciman and Sir William Noble are, in their different ways, remarkable men. Sir Walter was, as he reminded the Chamber in his presidential address, reared in a sailing ship. He is a shipmaster who became a shipowner. A number of Newcastle and Shields captains have, in their time, attained to ownership, though not to Sir Walter's leading position. He has navigated ships on many seas, and, in a hard school of rough experience, developed the strength of character which perhaps his northern ancestry gave him. With success he has not changed. Wide in sympathy, he does not hesitate to speak out. Though not a sailor, Sir William Noble has something of the same quality of fearless expression, and in his public utterances has shown himself a capable man of affairs with a broad and cheery outlook.

Mention must be made, too, in this place of the

fact that in Sir Walter's son, Mr. Walter Runciman, the Board of Trade had, in 1914-16, as President, a North Country shipowner who acquitted himself with distinction in that important position.

South Shields, the birthplace of Mr. Walter Runciman, was also, years before, the home of the first lifeboat, and so we add yet another item to the list of good things which have come from the Tyne.

### Railway Grouping

The railway connections between Tyneside and the rest of Great Britain are, and for many years have been, in the hands of a single railway company. To the North-Eastern Railway belongs practically the whole railway system of Northumberland, Durham and Yorkshire. Though holding a monopoly, the North-Eastern has served its district well. The affairs of the company have been admirably managed, and it is, by common consent, the strongest of the concerns which are being amalgamated under the Railways Act to form the Eastern Group—the London and North-Eastern Railway—as it is now named. The North-Eastern as from April, 1922, absorbed the Hull and Barnsley Railway, and the other principal lines forming the group are the Great Northern, the Great Central, the Great Eastern, the North British, and the Great North of Scotland Railways.

As a result of the amalgamation not only the railways but to a large extent the docks on the East Coast come into the same ownership and management. These docks include Tyne Dock (and also

Dunston Staiths) on the Tyne, Hartlepool Docks, Middlesbrough Dock, the Humber Docks (that is, Hull, Immingham and Grimsby but not Goole, which is associated with the North-Western Group), Lowestoft and Harwich. The Eastern Group of Railways also has direct access to other ports on the East Coast, namely, Blyth, Sunderland, Boston, King's Lynn, Ipswich, and London. It takes over docks at several Scottish ports, and connects with other ports in Scotland where the docks remain in independent hands, and its lines also bring it directly into touch with ports on the west coast of England. Although at some of the north-east coast ports—notably the Tyne, the Wear, and the Tees—there are docks and wharves which do not pass into railway hands, the Eastern Group now has an altogether preponderating influence over the working and development of the seaports in this district, and the question of its policy in relation to those ports is one of the greatest interest and importance to the business community. Industrial, commercial, and shipping interests are all concerned in what may happen under the new conditions.

As indicated in discussing the similar question arising in South Wales, it is difficult yet to forecast the consequence of the Railways Act, but probably, as the changes resulting on the north-east coast, from steps taken under the Act, are less radical than in South Wales, the effects may be less marked. So far as the north-east coast ports are concerned, the only change directly resulting from railway amalgamation has been the elimination of com-

petition on the Humber, where Hull and Barnsley, North-Eastern and Great Central Docks all come under single management. On Tyneside, the position of the North-Eastern Railway has not been altered, except by that line's becoming part of the group controlling the whole of the East Coast in the way already mentioned.

## SUNDERLAND

A generation ago a man well known in North Country business circles, who wrote to the papers about some Newcastle project which was then being discussed, wound up by saying that whatever was done in the matter would be servilely, if feebly, imitated in the sham, second-rate, makeshift, make-believe place from which he dated his letter—Sunderland, near Newcastle. This was distinctly hard on Sunderland, but the letter had a substratum of truth in it, for Sunderland was and is Newcastle—with a difference—principally a difference in size. Both the Tyne and the Wear have a long commercial and shipping history. Both build ships and export coal, but the Wear builds fewer ships and exports less coal than the sister river to the northward.

The coal shipped from Sunderland comes naturally from the Durham portion of the northern coalfield. The best kinds of Durham gas and steam coal have a great and worldwide reputation. Shipments of the mineral here have exceeded 5,000,000 tons in a year.

### Shipbuilding

For shipbuilding Sunderland was already famous in the days of wooden vessels. After 1853 that trade declined, but in the year previous the first iron sailing ship built on the Wear had been launched. She was called the *Loftus*, and was built for the Consett Iron Works to carry Cleveland ore from Yorkshire to the Tyne. (We shall hear more of this ore at Middlesbrough later.) The second iron vessel was laid down at Laings' yard, which, even at that time, had been established some half-century or more. Messrs. Doxford are notable for having frequently been among the first two or three of the shipbuilding firms of the world ranked according to their output for the year. In 1905 and 1907, when the blue ribbon went to America, Messrs. Doxford's output was the largest of any firm on this side of the Atlantic. In 1921, for the first time for years, they failed to head the list of Wear yards. Here are detailed Wear figures for comparison with those of the Tyne already given :

| | No. | Tons. |
|---|---|---|
| 1910 ... ... ... | 58 ... | 185,499 |
| 1911 ... ... ... | 86 ... | 321,348 |
| 1912 ... ... ... | 82 ... | 346,009 |
| 1913 ... ... ... | 79 ... | 341,598 |
| 1920 ... ... ... | 67 ... | 333,328 |
| 1921 ... ... ... | 30 ... | 153,710 |
| 1922 ... ... ... | 26 ... | 130,847 |

Sunderland Bridge, with its single iron span across the river, opened in 1796, was rightly re-

garded at the time as a wonderful engineering feat. Since then it has been reconstructed. The railway bridge is just above, and higher up the river is the Queen Alexandra Bridge, opened in 1909. All give plenty of headroom.

### Docks and Piers

The town is close to the mouth of the Wear. The inner piers at the harbour entrance were begun in the eighteenth century. Rather more than sixty years ago the River Wear Commission, which is an old body, took over the South Docks at the mouth of the river, which had been constructed by a company, and many extensions and improvements have since been carried out. The docks are right on the coast, so that from dock to sea takes a ship a very short time. In extent the docks are 87 acres. The modern piers protecting the harbour entrance are each about half a mile long, the northern or Roker Pier having been completed in 1903, and the southern in 1915. Since the war the south outlet from the docks has been closed.

During the war the trade of Sunderland was very badly hit, and the Wear Commissioners would have been unable either to pay interest on their mortgage bonds or to redeem those that fell due without temporary assistance from the Treasury which they obtained. The Sunderland Corporation also helped. By an Act obtained in 1922 the Wear Commission has been put on a new footing financially, and the carrying out of certain works has been authorised.

Much work has been and is being done in deepening and improving the river. There are two public dry docks belonging to the Commission, and also other dry docks in the port.

Imports include timber, iron ore, grain (for which new discharging plant and ample warehousing space have been provided), oil, etc., and the exports, in addition to coal and coke, comprise iron and steel rails, machinery, and a variety of other manufactured goods. Fishing is also carried on, and there is a fish quay with direct railway connection.

# XI.—MIDDLESBROUGH

BETWEEN the southern border of the Newcastle coalfield in County Durham and the Cleveland iron district of North Yorkshire flows the River Tees. In this conjunction of coal and iron was the foundation of the business of Tees-side. The local industries are the making of coke from coal, the production of pig-iron by the smelting of ironstone and iron ore in blast furnaces with coke, the making of steel from iron, and the production of manufactured iron and steel. The trade is the importing of ores from Sweden, Spain, India and other places to supplement the local supplies of Cleveland ironstone and the exporting of pig-iron and manufactured iron and steel. There are other industries and other trades on Tees-side, but iron dominates, and those in whose hands is the direction of affairs are fittingly called ironmasters.

The ironmaster is the typical figure of Tees-side. His interests are wide, inasmuch as they include industry and trade and shipping. The typical ironmaster, it might be said, is Sir Hugh Bell, but Sir Hugh is more than typical. With his breadth of outlook, acuteness of mind, and vigour of personality, he is a commanding figure. He has been a

member of the Tees Conservancy Commission for nearly half a century, chairman for nearly twenty years, and has borne a large share of the burden of this public trust, in addition to taking a leading part in the industry and trade of the district. He is chairman and managing director of Bell Bros., Ltd., associated with Dorman, Long and Co., Ltd., of which, and of other companies, he is also a director. Sir Hugh Bell is, besides, on the board of directors of the London and North-Eastern Railway Company and is chairman of the Executive Committee of the Dock and Harbour Authorities' Association.

The Tees Conservancy Commission has, since it was formed seventy years ago, converted a shallow stream into a broad waterway navigable by the largest ships. Sixty years back there was a depth of $3\frac{1}{2}$ feet of water on the bar at low water. Now the figure is 20 feet and the tide rises 17 feet, giving 37 feet at high water. With the industrial development of Tees-side the ports of Middlesbrough and Stockton have, within living memory, become important shipping centres. Middlesbrough is five miles from the mouth of the Tees on the southern or Yorkshire side, while Stockton is about three miles higher up on the opposite bank.

### River Improvement

Both port and town are modern at Middlesbrough, but Stockton is an old market town, and a meeting held there in 1805 was the first step

toward improving the Tees. The tidal river was navigable by small craft for some distance above Stockton, but a few miles below the town, on approaching the sea, it became a great estuary, two or three miles wide, shallow, and full of shoals. Such channels as then existed wound about and frequently changed. Some improvement was effected by the Tees Navigation Company, but in 1852 that gave place to the Tees Conservancy Commission, which was then established. Its constitution, as revised in 1875, makes it representative not only of local municipal bodies, but of payers of dues and shipowners. In addition three members are appointed by the Board of Trade.

By the erection of training walls, constructed of waste slag from the local ironworks, by systematic dredging, and by building breakwaters at the mouth of the river, the Conservancy Commission has transformed the Tees. There is now a broad, deep, well-marked channel from the sea up through the estuary. Large liners (up to about 600 feet in length) trade regularly to the North-Eastern Railway Dock at Middlesbrough, which was first opened in 1842, while large vessels berth at the riverside wharves and are able to proceed up to Stockton. In the river proper the channel has been widened at certain places as well as deepened.

The South Gare breakwater was begun in 1863 and took twenty-four years to build, being over two and a half miles long. The North Gare breakwater has been completed to a length of about three-

quarters of a mile. Under statutory powers obtained in 1920 the channel will be still further widened and improved. (See map on page 193.)

### Industrial Development

The development of Tees-side as an industrial district, which the improvement of the waterway has greatly facilitated, had already commenced when the river was taken in hand by the Conservancy Commission. The first public railway worked by means of steam locomotives was, it will be recalled, the line from Stockton to Darlington, which, surveyed and built under the supervision of George Stephenson, was opened for traffic in 1825. The engines were made at the works which Stephenson had opened at Newcastle two years before, and the line was primarily intended for mineral traffic. In 1830 it was extended from Stockton to Middlesbrough, the site of which, not long before, had been farming land, and where, at that time, there was a population of not more than about 150.

In 1839 the north-eastern district produced only 13,000 tons of pig-iron out of the 1,250,000 representing the make of the whole kingdom for the year. The existence of ore along the Yorkshire coast between Whitby and the mouth of the Tees had long been known. "It was, however," wrote Sir Lowthian Bell, "not until 1836 that a regular seam of the mineral belonging to the lias measures was opened out a few miles from Whitby in the valley of the Esk, the produce so obtained being

conveyed by the sea to the Tyne, and subsequently to the Tees. In the next ten or twelve years several furnaces were erected in Northumberland and Durham, in order to smelt the ironstone of the carboniferous formation. By means of this ore and that brought from Whitby, the make of pig-iron in the north-eastern district was raised to about 150,000 tons so early as 1850. It was in that year that the bed of ironstone worked near Whitby was traced by Mr. John Vaughan to the neighbourhood of Middlesbrough, where, being within easy reach of the Durham coalfield, extensive smelting works were speedily erected. The result has been the rapid creation of the largest ironmaking district in the world, preceded by a speedy abandonment of all the ironstone pits which had been commenced in the two more northern counties."

Besides the ironstone from the Cleveland district, the neighbourhood of the Tees contains, as Sir Lowthian Bell went on to point out, other minerals necessary for the manufacture of pig-iron—namely, limestone and coal. In the thirty years following Mr. John Vaughan's discovery, the population of Middlesbrough grew from 7,600 to 55,000, and that of Stockton from 10,000 to 41,000, while there was a great increase also in the population of the surrounding districts, where the materials for the iron trade were mined and quarried. Instead of 13,000 tons, the district produced 2,700,000 tons of pig-iron in a year, or about a third of the total production of the kingdom. At the end of the next thirty

years, just before the outbreak of war, this proportion had increased to over forty per cent. of the total.

The production of pig iron in the United Kingdom, according to statistics recently published by the National Federation of Iron and Steel Manufacturers, has been :

| | Tons. |
|---|---|
| 1740 ... ... ... ... ... | 17,350 |
| 1796 ... ... ... ... ... | 125,079 |
| 1820 ... ... ... ... ... | 368,000 |
| 1839 ... ... ... ... ... | 1,248,781 |
| 1850 ... ... ... ... ... | 2,249,000 |
| 1880 ... ... ... ... ... | 7,749,233 |
| 1910 ... ... ... ... ... | 10,012,098 |
| 1920 ... ... ... ... ... | 8,034,700 |
| 1921 ... ... ... ... ... | 2,616,300 |

## Reclamation and Roads

The circumstance that large quantities of slag from the ironworks have been available—indeed, have had to be dumped somewhere—has facilitated the work of the Tees Conservancy Commission in more ways than one. The slag has been used in building the training walls and piers, and also in carrying on the process of reclaiming land on the foreshore of the river, which has been a natural accompaniment of the scheme of converting the wide, shallow stream into a deep, navigable waterway. In some places the slag has accumulated in large waste heaps, seeming to strangers like small mountains. Much of it has been taken out to sea, but a more satisfactory method of disposal has been that of depositing the slag on the foreshore, and

thus building up sites for works and other industrial purposes.

Already in various places along the course of the Tees over 3,000 acres of land have been reclaimed and utilised for industrial development, and recent sales have indicated that there is still a demand for sites for new works. On the Yorkshire side of the estuary the whole of the reclaimed land and a large area in process of reclamation have been disposed of for iron and steel works, shipbuilding yards, dry docks, and wharves. Under the powers in the Commissioners' Act of 1920 the Seal Sands on the Durham side of the estuary will be reclaimed behind a high training wall to be erected in connection with the improvement of the navigable channel, and in this way nearly 2,000 acres of new land will be formed.

The work of the Conservancy Commission for the development of the district has included, besides that already described, the construction of a through road running down the north side of the river from Stockton to Port Clarence, opposite Middlesbrough. This was completed, under a joint scheme with other bodies, some years ago. A continuation of the highway, which has been the work of the Commission, gives much readier communication between the Tees-side and the Hartlepools. Work on this further portion was delayed by the war, but the road, which cost £70,000, was opened in 1918, and taken over by the Durham County Council in 1920.

Middlesbrough and Port Clarence, it should be explained, are connected by a transporter bridge, that is, a platform crossing from side to side suspended from a girderwork construction which spans the river at a high level and is supported on a girderwork tower at each end. Thus the navigation is not interfered with. The bridge, which was opened in 1911, resembles that over the Usk at Newport.

The moving spirit in the road schemes has been Mr. John H. Amos, the General Manager of the Conservancy Commission, who began to interest himself in this question over thirty years ago, soon after he first entered the service of the body with which he has been so long associated. Indeed, in all the many and important activities of the Tees Conservancy Commission Mr. Amos has shown great organising ability and untiring energy. He is held in much esteem by a very wide circle of friends among the business community of Tees-side.

### Hard Times

The Conservancy Commission has a repairing yard and dry dock at Middlesbrough, and Smith's Dock Company, Ltd., also has dry docks in connection with its shipbuilding and repairing yards. Normally the Tees, like the Tyne and the Wear, is able to report the construction in its numerous shipbuilding yards of a large amount of shipping tonnage each year, but in recent conditions very few vessels have been on the stocks. In 1922 five firms launched 16 vessels totalling 40,784 tons

on the Tees, as compared with 28 vessels of 137,309 tons in the previous year, and 42 vessels of 201,249 tons in 1920. The fact, already mentioned, that some of the land in process of reclamation has been acquired for shipbuilding yards and dry docks may, however, be taken as an indication that a resumption of the active development of the district is looked for in the future, if not in the immediate present.

The depression which has for some time existed in shipbuilding and in the iron industries in general has hit Tees-side hard. Matters began to go wrong with the miners' strike of 1921. Business went to Belgium and Germany, where iron could be produced more cheaply than in this country, and the process of recovery, which has begun, is proving a slow one. As already mentioned, there are other industries in the district. Salt-making, for instance, is an old industry on the Tees, but the majority of the local population depend on work in the various branches of the iron trade. Perhaps five-sixths of the people of Middlesbrough are of the industrial class. Street after street presents to view long straight lines of small brick houses, without gardens, and each almost exactly like all the others. To an unaccustomed eye the dull uniformity is apt to seem depressing at the best of times, and more so when conditions are as they have been of late.

### Signs of Recovery

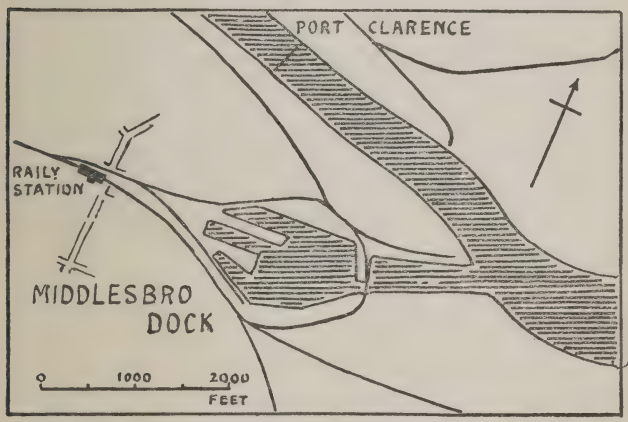
The opinion is held, however, that the tide has turned. Recovery may be slow, but already it is possible to point to positive proofs that trade is reviving. So far as the immediate vicinity is concerned, there is the fact that Messrs. Bolckow, Vaughan and Co. have recently resumed operations at their large Cleveland Steel Works, after a year's idleness. These works have, during the last three or four years, been greatly enlarged, and are capable of producing 8,000 tons of steel per week. Their restarting has given employment to large numbers of men.

In a broader view, too, the outlook at present for the iron and steel industries is more cheerful, certainly much better than it was a short time ago, when pig-iron was being imported in considerable quantities instead of being exported.

### Middlesbrough Dock

Though production has been reduced to small dimensions a certain amount of transport and distribution is bound to go on. The port is a link in long chains of movement, and so the river wharves and the Middlesbrough Dock are by no means deserted. Indeed, the dock in particular is a busy place. Belonging to the North-Eastern Railway, and surrounded by sidings and very numerous cranes, the dock—which is 26 acres in area (10 acres more than the original dock) and has a new entrance

80 feet wide, with a depth of 32 feet at high water of ordinary spring tides—is usually occupied by a number of large steamers loading manufactured iron and steel goods. There are regular sailings for the Far East—India, China, Japan, and Australia—and for South Africa. Some of the ships bring Indian ores by way of return cargoes. Moreover,




MIDDLESBROUGH DOCK.

besides mineral and metal traffic, a considerable general trade is normally done on the Tees. At the entrance to Middlesbrough Dock a notice prohibiting smoking is exhibited. There is nothing of special interest in that, but significant of the variety of nationality one may encounter here is the fact that the notice is printed in twelve languages.

The North-Eastern Railway Company, in anticipation of future requirements, has acquired a

large tract of ground lower down the river, where reclamation of land is in progress as already described.

Though, in writing of Tees-side, the depression and difficulties of the present cannot be overlooked, to dwell on these things and ignore the signs of recovery such as have been mentioned would be a mistake. It is hoped—one may say with truth that locally, among those who should know, it is believed—that the difficulties are passing. In recent years the productive capacity of various local works has been greatly enlarged—one instance has been named, but there are others—and it is believed, not only that unemployment will cease, but that a period of great activity and many further developments will be entered upon in due time.

## HARTLEPOOL

A few miles northward along the Durham coast from the mouth of the Tees is a projection of the land upon which stands the old town of Hartlepool. South of the peninsula, and sheltered by it, is Hartlepool Bay. The situation being suitable both for defence and for commerce, Hartlepool in early days became a mart and a port with a considerable trade. On the mainland westward of the bay a town grew up in modern times. This is West Hartlepool, which resembles Middlesbrough in that its growth did not begin till the nineteenth

century. Now it greatly exceeds in size the older town to the east of it, but the two places form one port, the entrance to which is protected by a breakwater.

### Docks and Trade

In the thirties the construction of a railway, to bring coal to Hartlepool, and of a dock there were the first moves towards port development. In the forties the opening of railway connection with Stockton was followed by the building of docks at West Hartlepool. Since then the harbour approaches and works have been greatly improved, the system of docks much extended, and the railway facilities increased.

All the docks are now the property of the North-Eastern Railway Company. They are well equipped —the railway company is carrying out the extensions of the coal shipping facilities—and adjoining is ample warehouse accommodation. Timber is the most important feature of the shipping trade. Very large quantities are imported at West Hartlepool for mining purposes. Iron ore also figures among the imports. Coal is largely exported from both West and East Hartlepool, and the latter is, in addition, an important centre for the fishing industry, the facilities provided by the railway company enabling the fish to be rapidly distributed.

### Shipbuilding

Industrially the Hartlepools are notable for extensive shipbuilding yards and repairing and engineering works. In output of new tonnage the port usually ranks among the north-east coast centres next after the Tyne, the Wear and the Tees. Messrs. William Gray and Company, Ltd., of West Hartlepool, several times in the nineties showed the largest output of any firm in the world for a year, while at Messrs. Irvine's Shipbuilding Company's the Furness co-partnery scheme was put into operation in 1909. In 1922 only four vessels, totalling 20,833 tons, were launched at West Hartlepool, compared with six, making together 37,262 tons, in 1921, and sixteen, making 73,425 tons, in 1920.

An important industrial development is the carrying out of a road scheme with which progress is now being made. The new highway connecting Middlesbrough with Hartlepool has already been referred to. It is proposed that the road shall be continued northward a short distance inland from the coast, crossing the Wear above Sunderland, and going on to the Tyne. For the present, however, the road is being made only as far as Easington, about half-way between Hartlepool and the Wear. The highway will be an important new line of communication, as the district it will traverse is at present very ill supplied with roads.

# XII.—HULL

MR. WILCOCK, I hope, will forgive me for saying that he rather takes one by storm. A big, powerful Yorkshireman is this Docks and Divisional Goods Manager for the North-Eastern Railway at Hull, and knows his business alarmingly well. Do you dare to question the pre-eminence of Hull and instantly, under your very eyes, your miserable arguments are crumpled to nothing in his strong grasp. Were it possible to spare a thought for any subject but Hull you might tremble for your own safety before the onslaught of his words. But he is not thinking about you at all; his mind is on Hull (where all the docks now belong to the Eastern Group of Railways, in which the North-Eastern is the predominant member) and your mind is perforce fixed on Hull too while you are with him.

## The Coal Trade

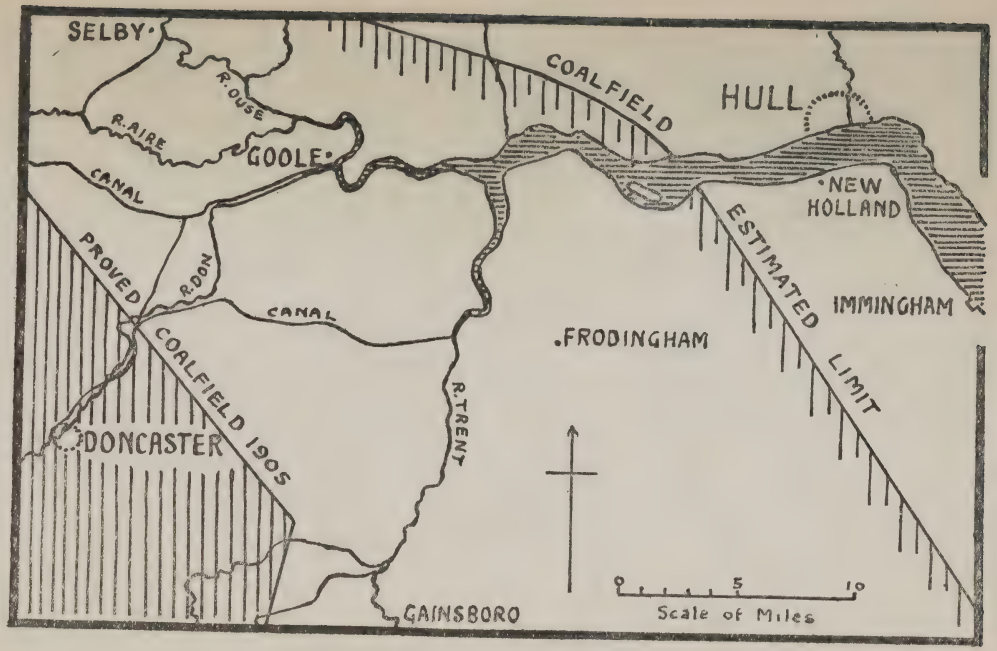
I thought to draw him out—a quite unnecessary effort on my part. Already I had come across the two largest coalfields in Great Britain, yet I gathered from a publication for which, it was true, neither Mr. Wilcock nor his company was responsible, that here was the largest of all. How could that be? Perhaps several had been grouped into one to produce this result—South Yorks, West Yorks,

Derbyshire and Nottinghamshire. I had seen it alleged in print that this great coal area produced a quarter of the total output of the whole country—that must be between 60,000,000 and 70,000,000 tons annually—and the Humber ports had exported less than 2,000,000 tons in 1921.

There were reasons for that, I was promptly reminded. In consequence of the war Russia had ceased to take coal; Germany was only beginning to buy again. "Reparation" coal from Germany delivered to France, Belgium, and Italy had spoiled the markets there, and Holland had bought a good deal of German coal. Those were mostly temporary causes, but they had been telling heavily on the Humber trade. Then there was the coal strike of 1921. During the war and the strike American coal gained a foothold with our South American customers for instance, but best Yorkshire hard steams were unapproachable in quality, and were slowly but surely recovering their position in the world. The year before the war Hull alone exported a total of 7,000,000 tons of coal, and the Humber ports altogether some 13,000,000.

Mentally I compared the Tyne figure of 20,000,000 tons exported in that year, and Cardiff's 25,000,000, but I did not interrupt.

The Yorkshire and Midland coal area is the field of the future, Mr. Wilcock pointed out. Its development is still at an early stage. The northern field—the longest worked—is at the peak in its production.




HUMBER WATERWAYS AND COALFIELD.

"Not in sight of exhaustion yet," I commented.

"Agreed, but little further development can be expected," he went on, "and the working of the field for which the Humber is the natural, the only outlet, is being carried steadily eastward. New pits are being sunk along the border towards the east coast, and in years to come it may be anticipated this will be the greatest coal-producing area in the country. The coal exports of the Humber, therefore, are bound to grow." [In 1922 the coal exports from the Humber ports were nearly 10,000,000 tons.]

### A Centre of Industry

I recognised that controversy was a mistake, and altered my tactics. "A port which is a centre of manufacture, and is a market as well, is in the strongest possible position," I suggested.

This led to my being invited to remember that nowhere in the world is there a larger centre of seed-crushing manufacture than at Hull. Nowhere else is vegetable oil production conducted on the same scale. Seeds—cottonseed, linseed, rapeseed, copra, palm kernels, soya beans, castor seed and ground nuts—are imported, and the various products (which include, of course, cake for cattle food) are largely exported. Part of these products are materials used in the manufacture of paint, colours and varnishes, of which Hull makes more than any other place in Great Britain.

Then there is the grain trade—huge flour mills at the port—the import of Scandinavian sawn

timber, the new oil depot where the principal oil companies have their tanks, the fish and fruit trade, and many others.

### The Fruit Trade

The ripe fruit and vegetable market at Hull, Mr. Wilcock explained, is the largest in this country. Apples, grapes, plums, pears, bilberries, cranberries, cherries, red and black currants, melons, pomegranates, oranges, lemons, bananas—the list makes one's mouth water—beside tomatoes, onions, cucumbers, cabbages, cauliflowers and beetroot are landed at the riverside quay, disposed of by auction, and loaded direct into railway waggons, or warehoused close by till required. The facilities for prompt railway dispatch all over the North and Midlands are a big factor in the business.

The fruit and vegetables come mainly from the Continent, but also from Australia—my friend rolled a huge Australian orange across the table to me—and America. With its numerous regular services to Continental ports Hull can, and does, tranship a great deal of fruit for re-export and also distributes coastwise.

Mr. Wilcock having thus, with a few bold strokes, put in the leading lines of the picture of Hull as it is to-day, I took away the sketch in my mind to fill in some details. There were new things to note, besides recollections to refresh of things I had seen before.

### Growth of the Port

Down on the Corporation Pier, from which the ferry steamers cross to New Holland, I pondered a while. Here, twenty-three miles from the open sea, the Humber is little short of two miles across. Nearly twenty miles higher up the Trent and Ouse, which together drain one-fifth of England, mingle their waters, near Goole, to form this great Humber estuary.

Close by where I stood the "Old Harbour"—the tidal River Hull—joins the Humber, its banks lined with quays, and the stream crowded with lighters and small craft. Here, then, was the port granted by the King's Charter in 1382 to the town of Kingston-upon-Hull. Earlier even than that was the origin of the Hull Trinity House.

So, for centuries, merchants and seamen have traded from this port, but not till towards the end of the eighteenth century was the building of docks commenced. The older docks were constructed by the Hull Dock Company. After the first start had been made the dock system was enlarged from time to time. The Hull and Selby Railway, now part of the North-Eastern system, was opened in 1840. In 1880 the Hull and Barnsley Railway was formed, and built a line connecting the port with South Yorkshire, and also constructed the Alexandra Dock, which, until the new King George Dock was opened just before the war, was the largest dock on the Humber. In 1893 the Hull Dock

Company was in difficulty, and its docks were bought by the North-Eastern Railway Company, which, a few years later, entered into a joint scheme with the Hull and Barnsley Company to construct what is now the King George Dock. The financial backing for this, however, was entirely provided by the North-Eastern Company.

### The Wilson Line

The great growth of business which made Hull, on a basis of value of trade, the third port in the kingdom (only London and Liverpool showing larger figures) took place mostly within the last half-century. A large share in the work of developing the port was done by the proprietors of the Wilson Line. The name is a household word on the Humber. Recently Lord Nunburnholme (whose father, Mr. C. H. Wilson, became, in 1905, the first holder of the title) referred, in the House of Lords, to "the City of Hull, with which I have been long connected, and which my father, my brother and myself represented in another House for very nearly forty years."

The business carried on by Messrs. T. Wilson, Sons and Company (formed into a limited company in 1891, and now Ellerman's Wilson Line, Ltd.) was started some eighty years ago. In the early days the firm owned both sailing vessels and steamers. As steamers came into general use, the varous Continental services from Hull were extended. With the opening of the Suez Canal sail-

ings to the East were commenced. Later the firm started a New York line. Other businesses have been absorbed, and, in 1906, in conjunction with the North-Eastern Railway Company, the Wilson's and North-Eastern Railway Shipping Company, Ltd., was formed to provide improved services on several home trade routes.

So before the war Hull had developed a great shipping trade—about half as much again as at present. Its shipping business is recovering as fast perhaps as one could expect from the set-back due to the war. In the later war years and since Manchester has shown larger figures than Hull—and stepped into the third place—but conditions are too unsettled to afford much basis for comparison. In particular, Hull, having been the principal English port for Russian trade, is still handicapped in that direction.

### The Fish Dock

The Hull Docks (236 acres in area) extend for some seven miles along the northern shore of the Humber, and have a total quayage of nearly fifteen miles. The westernmost is the St. Andrew's Dock and its extension. Here is centred the trawling business, a prominent feature of Hull's shipping. With some 300 trawlers locally owned, and, in addition, boats from Norway and Sweden landing their catches the trade is, as may be imagined, very large. The herring stage and fish platform, from which there is quick dispatch by rail, are on the

north or town side of the dock. Slipways for trawler repairs are at the end of the western extension, while on the south side, between the dock and the Humber, stand coaling cranes and also the premises of the Hull Ice Company, Ltd., where plentiful supplies of ice are made. Before proceeding to sea a trawler takes aboard, say, fifty tons of ice, which is transported by belt conveyers straight from the ice factory into the vessel. The ice is formed in large tanks round sets of pipes, within which the expansion of ammonia that has been reduced to liquid form by pressure produces the necessary degree of cold. The ammonia, being afterwards cooled, is compressed again, and so does its work by circulating, without coming into contact with the water to be frozen. From the top of the ice factory, looking across the city, one notes the numerous cowls on the roofs of buildings in which the fish are cured and smoked.

Next, proceeding eastward, are the William Wright and Albert Docks, surrounded, like all the Hull docks, with very complete railway facilities. In them various general cargoes are handled, and alongside, as well as at the Alexandra Dock, is cold storage accommodation for butter, frozen meat, bacon, eggs, and so on. On the south side, along the tidal frontage, is the Riverside Quay for passenger traffic, which is provided also with the facilities for dealing with fruit imports already described.

Passing the older docks, which lie among the

RIVERSIDE QUAY, HULL,

city factories and streets, and accommodate the short sea and coasting traders, and crossing the Old Harbour, before referred to, one reaches the Victoria Dock, near which are timber ponds. This part of the port deals with the extensive trade in sawn timber, imported mostly from the Scandinavian countries. A million tons is the normal annual import of timber. Adjoining is Earle's Shipbuilding Yard, and next again lies the Alexandra Dock.

### Dock Development

This dock, of 53½ acres, was made, as already incidentally mentioned, by the Hull and Barnsley Railway Company. That company has, since April 1, 1922, been amalgamated with the North-Eastern. Thereby hangs a tale which, however briefly, must be recited before we have finished, but perhaps it will be best to avoid a parenthesis and first to complete this summary survey.

In the Alexandra Dock larger ships berth than in the docks so far noticed. They come from almost all parts of the world. American and Canadian provisions are discharged here, and there are regular lines also from Japan, China, Australia and India, as well as Egypt, Portugal and other parts of Europe. On the north side of the dock, and also on the river pier adjoining, are coal shipping appliances.

After taking some seven years to build, the King George Dock was opened by His Majesty in June,

1914. The outbreak of war occurring almost immediately afterwards, the dock has not been in commercial use for more than three or four years. It is 53 acres in extent, but is planned so that the water area can be readily increased to 85 acres. The entrance lock, 750 feet by 85 feet, has a depth of 20 feet at low water and 42 feet at high water springs. Along the north side are storage sidings and coal shipping appliances, two hoists and two belts. At the western end is the grain silo, a huge ferro-concrete building with holding capacity for 40,000 tons of grain. Wheat, oats, maize and barley are stored here. This dock, like the Alexandra, accommodates the large overseas vessels trading to the port.

### Wool and Oil

Large wool sheds have been erected near the King George Dock to supplement wool storage accommodation previously existing at the Alexandra Dock and other docks in Hull. In addition, eighteen Government wool sheds have been put up in north Hull, each capable of receiving 13,000 bales if stacked, or, if laid out for inspection, 3,000 bales.

Since the war the wool trade of Hull has undergone some changes. Both foreign and colonial wools were previously imported by direct steamer and also by coastwise steamer from London, but wool was not sold and bought at Hull. Government action caused largely increased direct imports of colonial wool, and public sales of wool have

taken place periodically in Hull since 1920. Whether the local expectation that Hull will become an established wool market will be realised is for the future to answer. (See also other references to wool under London, Liverpool, and Manchester.)

Seaward of the long range of docks the North-Eastern Railway constructed, before the amalgamation of the companies, a deep water jetty at Salt End, for the mineral oil trade. With 30 feet of water at low tide, the largest vessels can berth alongside the jetty either to discharge cargoes of oil or to take oil bunkers. The pipe lines, carried to the end of the jetty, are connected with ships by a sufficient length of flexible pipes to allow for the rise and fall of the tidal water. Adjoining are large tanks erected by the principal oil companies, and the storage capacity of the depôt is being increased steadily by the erection of new tanks by the various oil companies. The large area of land available for the extension of the oil storage and the additional distributing facilities which are in contemplation will make adequate provision for a large increase of the trade, which has grown greatly during recent years.

### Inland Water Traffic

A special feature of the port of Hull is the free access to the docks allowed to river craft and barges. These vessels pay no dues. Consequently goods discharged overside from steamers and

carried to waterside works or mills can be handled very cheaply. Advantage is taken of this arrangement not only in Hull itself, but in connection with the canal systems which connect the Humber with the large towns of Yorkshire and the Midlands.

By means of the Trent Navigation there is direct water communication with Gainsborough, Newark, Nottingham, Leicester, Derby and also with Sheffield, Birmingham and the midland system of canals. The Trent Navigation has, in recent years, been much improved, and at the present time the Nottingham Corporation is engaged on the reconstruction on a larger scale of several locks. The completion of this scheme will enable barges up to 120 tons capacity to traverse the waterway at all seasons.

The Aire and Calder Navigation, which serves the West Riding of Yorkshire, carries a large amount of traffic to and from Leeds, Wakefield, Barnsley and other large industrial centres. It communicates also with York by means of the Ouse, and by various canals right across country to Bradford, Sheffield, Huddersfield, Rochdale, Manchester and Liverpool. Barges carrying up to 250 tons go to Leeds, and those taking 120 tons to Wakefield, Dewsbury, etc. The history of Goole is closely connected with that of the Aire and Calder Navigation, but Goole is a separate story which cannot adequately be given in a passing reference. The Navigation Company has large docks and warehouses here, and the North-Western

and Midland Group of railways (by virtue of having absorbed the Lancashire and Yorkshire) is largely interested in the trade of Goole, to which it has direct access. The North-Western Group also has running powers by rail to Hull. This brings us to the question of railway communications and to the points arising in connection with the Hull and Barnsley Railway and dock already incidentally mentioned.

### Railway Grouping

In developing their trade the merchants of Hull found themselves hampered by the absence of railway competition. The place was served by the North-Eastern Railway, but whereas farther north that railway ran through industrial districts, it reached Hull across thirty miles of agricultural land, not providing so much traffic. The inducement to give good facilities at Hull seemed to be lacking, and, whatever the railway company might have to say, the business community of Hull was in fact not satisfied. In the eighties the Hull and Barnsley line was constructed, and also, in connection with it, the Alexandra Dock at Hull.

"The Hull and Barnsley Dock," declared Lord Nunburnholme during debate on the Railways Bill in August, 1921, "was the mainstay in the growth of Hull. Without that dock the New York and Boston trade could never have been developed at all, and trade with the Far East also could not have been conducted."

Certainly that was a very significant statement as to the value of the competitive facilities which were obtained. Subsequently to the opening of the Alexandra Dock the old Hull Dock Company was, as already mentioned, in difficulties. Its docks were acquired by the North-Eastern Railway Company, and, later, arrangements were made whereby the North-Eastern and the Hull and Barnsley Companies jointly built the King George Dock at Hull. The North-Eastern, however, found the necessary capital, and (as pointed out in debate on the Railways Bill) since 1883 one-sixth of the capital expended by the North-Eastern, amounting to £3,500,000, has been spent in Hull, showing that the company has interested itself deeply in the progress of the port.

Nevertheless, Hull was very desirous, when the Bill which became the Railways Act, 1921, was before Parliament, of preventing the Hull and Barnsley Railway from being included in the Eastern Group. Under several previous Acts the Hull Corporation had been given a right of veto upon any infringement of the independence of the Hull and Barnsley Railway, and the argument that this line should be associated with the North-Western Group was very strongly pressed before both Houses. It was pointed out, however, that the agreement was that the Hull and Barnsley was not to amalgamate with another railway, whereas the question debated was not that at all, but whether it was to amalgamate with the Eastern or

the North-Western Group, and in the end, the Hull and Barnsley was included in the former. It is consequently part of the London and North-Eastern Railway, as the Eastern Group has been named.

For the results of railway grouping one must wait, here as elsewhere, but Hull was quite a special case, and a study of the Parliamentary proceedings in connection with the Railway Bill bearing upon the fate of the Hull and Barnsley line leaves a very strong impression of the difficulty of reconciling what would be best for the locality with the general scheme of the measure. One member, who spoke most strongly in favour of inclusion in the North-Western Group, concluded by intimating that his vote would be given in the opposite sense, against what he described as the public interest. While no final opinion can be formed until consequences have more fully manifested themselves, it is significant that there is uneasiness among the business fraternity in Hull at the attitude of the railway company since its competitors have been absorbed. What perhaps is in the minds of traders is that there are other ports (outside the area of the company's monopoly of land carriage) to which traffic may be transferred, to the detriment of the business of Hull. Some commercial men question very much whether the change which has been made will be beneficial.

### Trade and Industries

In the meantime Hull is a busy place, importing, besides fruit, meat and other provisions, large quantities of materials for the manufacturing industries carried on in the city itself and in the large district which the port serves by means of railways and canals. Among these raw materials grain and oil-seeds, timber, wool, metals, ores, fuel oil and motor spirit bulk largely. The principal export is coal, but, in addition, large quantities of general merchandise are shipped, the list including textiles, machinery and tools, vegetable oils, feeding cakes and fertilisers, chemicals, paint and so on, produced in the Yorkshire towns and in Hull itself.

On the fishing industry, it is sometimes said, depends the prosperity of West Hull, in the same way that East Hull relies largely on shipbuilding. Certainly the fishing industry, in its various branches, normally gives employment to many thousands of people in Hull. Both at Grimsby and Hull fishing has, however, been under a cloud. The coal strike of 1921 held up the trawlers, and other conditions, traceable in their origin mostly to the war period, have continued more or less to affect business adversely.

Shipbuilding also, it need hardly be said, has been depressed on the Humber, as in other centres where it is carried on. The output of the principal firms in the Humber area in 1921 totalled about 30,000 tons, which was less than half the figure for

1918, and, instead of turning out a considerable number of trawlers, not one was launched. In 1922 the shipbuilding output of the Humber was only a little over 7,000 tons. Repairing facilities, it should be mentioned, are ample at Hull, and there are a number of dry docks. Entered from the King George Dock are two dry docks, one 550 and the other 450 feet in length. Two more dry docks (the longer of 580 feet) are at the Alexandra Dock, and there are also a number of others.

## IMMINGHAM

Hull, as we have seen, is more than twenty miles from the North Sea. Goole above and Grimsby below, near the entrance of the Humber, have been mentioned. Besides, there is Immingham, six miles above Grimsby, and, like it, on the Lincolnshire side. Immingham Dock is the creation of the last sixteen years. It was made by the Great Central Railway Company, which already owned the docks at Grimsby. Before giving some particulars about Immingham a word as to Grimsby may be appropriate.

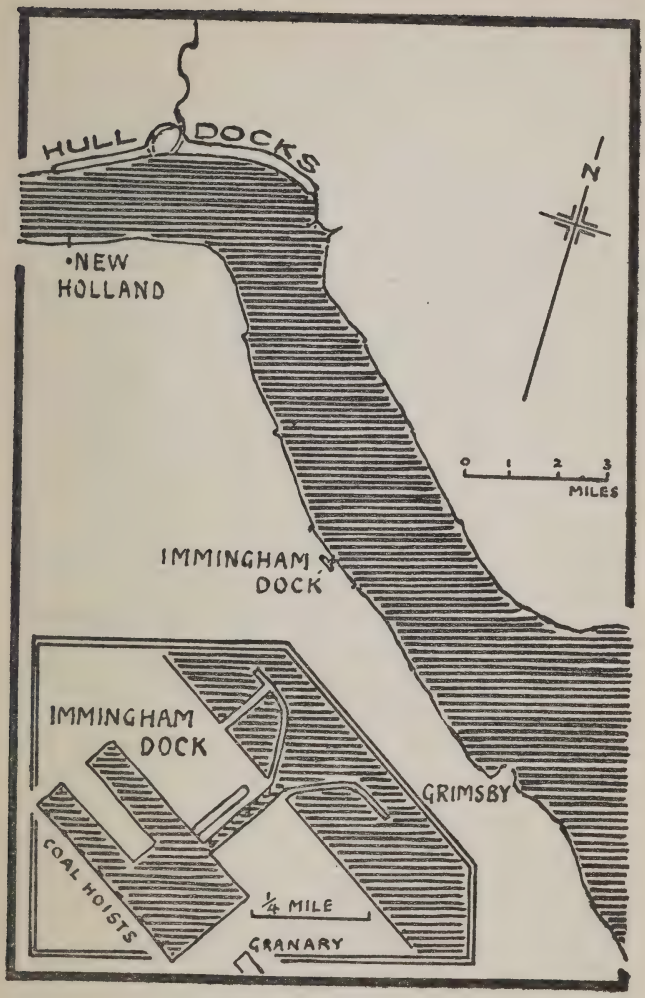
There are two things at Grimsby which it is impossible to forget. One is the tower. Between the entrance locks of the Royal Dock it rises a sheer 300 feet. Its purpose is to provide power for the hydraulic machinery at the dock, but its wider use is for a landmark visible across miles of sea and

land. The other haunting memory of Grimsby is a smell so all-pervading, so intense, that it penetrates one's consciousness as if it were the very essence of the vast quantity of fish—fresh fish—from which it comes. It is like no fish smell anywhere else. To be known it must be experienced. Description is no more possible than that the recollection of it should pass with the years.

Grimsby is fish. At Hull the trawlers, though important, are one of many interests. At Grimsby the fishing industry predominates. The port handles coal and timber and other things, and a number of regular passenger services to Continental ports radiate from it, but fishing and allied industries take precedence of these.

Nearly twenty years ago the Great Central Railway Company was proposing to construct a new dock at Grimsby, but it abandoned the project and made Immingham Dock instead. The work of construction was commenced in 1906. Six years later, in 1912, the new dock was completed and opened by the King.

The dock property includes 1,000 acres, fronting the Humber for a mile and a half. The dock itself has an area of 45 acres, with a 6-acre timber pond in addition. The dock is entered by a lock 840 feet long and 90 feet wide, with a depth at low water springs of 28 feet and at high water springs of 48 feet. The graving dock alongside the entrance is 740 feet in length.


HULL DOCKS
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IMMINGHAM DOCK
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GRANARY

THE HUMBER

### Traffic Development

Immingham Dock has certain marked advantages. It is the deepest dock on the Humber, is near the sea, and is entered direct from the main deep channel of the estuary. Ships can pass in or out at any state of the tide, or can bunker at the pier without entering the dock. The coal-shipping facilities are a special feature. Besides a hoist on the pier, there are seven others in the dock, each with large storage sidings capable of holding 3,000 tons of coal, so that a number of vessels can be rapidly loaded concurrently. At the outbreak of war, when the dock had been opened only a year or two, the shipments of coal had grown to 2,250,000 tons in the year.

The gradual development of workings on the Midland coalfields eastwards across Lincolnshire, referred to at the commencement of this chapter, is a movement towards Immingham. A glance at the map shows that the area of expected future development lies directly between the present collieries and Immingham Dock. Since the war the coal shipments here have fallen to relatively small dimensions, but there can be little doubt for the future.

Incidental to the coal business is the importing of timber for the mines. This trade has been developed at Immingham, and the dock also handles timber for railway sleepers and other purposes.

Moreover, there is ironstone as well as coal in the locality. Iron ores are imported in considerable

quantity at Immingham to mix with the local ironstone at a number of furnaces established in the neighbourhood, and the ironworks at Frodingham supply some of the exports shipped at the dock. Some notable shipments have come recently from as far away as Leeds. A number of railway sleeping cars manufactured in the Yorkshire city have been taken by train ferry from Immingham to France. The painting and decoration of several of these cars was being completed in a building adjoining the dock when I revisited the place recently, and very handsome they looked.

Grain traffic is another branch of shipping business dealt with here. The dock granary, though not so large as that at the King George Dock at Hull—it holds 15,000 tons against Hull's 40,000—is equipped with all modern appliances for handling grain. Government control brought wool to Immingham, and there is a warehouse for that commodity also. Several of the leading shipping companies have established services from this dock to Far Eastern ports, and altogether Immingham is in a fair way of increasing the various branches of its trade. Under the amalgamation of railways it becomes, of course, as the property of the Great Central Company, part of the dock and railway system worked by the Eastern Group, and there is some ground for anticipating that the new partnership arrangement may operate in the direction of bringing an increased amount of traffic to Immingham.

## HUMBER CONSERVANCY

The control of the Humber as a whole is in the hands of the Humber Conservancy Board, which came into existence at the beginning of 1908, superseding several older authorities which had exercised a divided jurisdiction. The Act which brought the present Board into being was based upon the report of the Humber Conservancy Commission, a body specially constituted to inquire into the conservancy and navigation arrangements of the Humber. The Chairman of the Inquiry Commission was the late Sir Kenelm Digby, and the report made by him and his fellow commissioners in 1906 was a model of what such a document should be. A very able man, with great administrative experience and sound judgment, Sir Kenelm put forward recommendations which have worked exceedingly well. Recently, in conversation with Mr. Andrew Marvel Jackson, the legal adviser to the Conservancy Board, I found that he was more convinced than ever of the soundness of the basis formulated by Sir Kenelm Digby's Commission and carried into effect by Parliament the following year. Probably no one is better able to judge of this than Mr. Jackson, for not only is he in close touch with the work of the Conservancy Board in maintaining and improving the navigation of the Humber estuary, but his half-century of commercial practice in Hull has familiarised him with every aspect of the busi-

ness of the city. No figure is better known in local shipping and commercial circles than his.

Before the establishment of the present Conservancy Board the authorities which exercised powers and jurisdiction on the Humber were the Humber Conservancy Commissioners, the Hull Trinity House, the Humber Pilotage Commissioners and the Corporation of Hull. The Conservancy Commissioners were not in a position to exercise efficiently the large powers they nominally possessed, and, moreover, their powers to some extent overlapped those of the Hull Trinity House, an institution of great antiquity which, besides being possessed of considerable property, and having the administration of charitable funds, derived revenue from shipping dues, and dealt with the buoying and lighting of the river and the regulation of the beacons. While the Conservancy Commissioners surveyed the river, the placing and shifting of buoys, beacons and lights which the surveys showed to be necessary were done by the Trinity House. There was thus a division of authority in respect of matters which it was desirable should be under the control of one and the same body. The Trinity House, also, was the chief pilotage authority for the Humber, and granted licences and certificates, but in other respects the local pilotage administration and the regulation of the service was in the hands of the Humber Pilotage Commissioners, the old constitution of which rendered it an unsuitable authority to exercise the powers it held.

The jurisdiction of the fourth body, the Corporation, consisted in a right to levy what were known as water bailiff's dues on shipping entering the port.

### The New Board

The change carried into effect at the commencement of 1908 was the transfer of all conservancy and pilotage administration from the bodies mentioned to the newly constituted Board as a single authority levying one set of dues. The Board—of which the Chairman is Mr. Oswald Sanderson, Managing Director of Ellerman's Wilson Line, director of numerous other companies, and a past President of the Chamber of Shipping—is constituted on a basis representative of local shipowners and commercial organisations, municipal bodies, railways, the Aire and Calder Navigation and the Hull Trinity House. There is a separate Pilotage Committee of the Board for the exercise of statutory powers in the control and regulation of that service.

A scheme for the improvement of the Humber was prepared before the war, and the question of carrying it into effect has been raised more than once since. The Board has felt, however, that the time has not been opportune in view of its own financial position and the great increase in the cost of all works of construction. It has performed, therefore, its ordinary work of attending to the lights, buoys and beacons, seeing to the removal of

wrecks and other obstructions, and generally looking after the safety of the navigation.

So our picture of the Humber shows a great natural estuary, which, though it has been improved, has not, as a channel of navigation, been "made" in the same sense as, for instance, the Tyne or the Tees. Its ports of Goole, Hull, Immingham and Grimsby have good communication, not only by rail, but, as to Hull and Goole especially, by inland waterways with coal, iron, and manufacturing districts. Grimsby and Hull are great fishing centres, the former being the premier port of the world in this respect. In addition Hull is a very important centre of varied industries. The neighbouring coal areas at present being worked, already responsible for a quarter of the total output of the country, have, between them and the coast, a mineral field as yet undeveloped, but destined, in all human probability, to yield greatly in the future. Therefore, though the present prospect is overcast, and, for some time the reaction of prolonged war upon trade must continue to affect conditions adversely, there is great promise of what may come when both this country and Europe—for the prosperity of both is necessary to the progress of the Humber ports—recover from the effects of the years of fighting.

# XIII.—GROUPING OF RAILWAYS AND DOCKS

THE past and present conditions of our principal home ports have now been brought under review, sufficiently at least to indicate the main features. After London, Southampton, and Bristol had been dealt with succeeding chapters discussed the South Wales ports, Liverpool, Manchester, and Glasgow, and the survey was completed by a descriptive account of the ports of the north-east coast from the Tyne to the Humber. In connection with most of the ports references have been made to the Railways Act of 1921, as to the effect of which questions of great interest and importance arise. Many facilities which, in the past, have been competitive, are being merged into local monopolies in the hands of the four great groups. In passing from port to port summaries have been presented of the local circumstances, with some indications of how the business community views the alterations which are taking place. These references have necessarily been concerned primarily with the standpoints of the particular localities, and it is intended now to supplement this sectional examination by looking at the matter more as a whole.

The important amalgamation schemes which have

been framed under the Railways Act of 1921, besides reducing competition in land transport facilities, have brought a number of railway owned docks, hitherto maintained as separate concerns, into the scheme of grouping. Ports where the docks are not in railway hands are affected by the grouping of the lines, but in other instances, where the docks themselves come under group management, the changes are necessarily more comprehensive. Whether the alterations which have been made will be beneficial is a question. Traders as well as railway shareholders and those in railway service are interested in the answer to that question, which, as has already been remarked, cannot be forthcoming in any degree of completeness till the experiment has been more fully tested by practice. The interests of the classes named are not necessarily in conflict. If the changes are conducive to better working all may benefit, but the disappearance of competition is an aspect of the matter in which traders have a special interest. Undoubtedly some apprehension is felt as to the consequences which may follow, and this is particularly the case regarding the possibilities in connection with traffic to and from the ports.

From the very early days of railways in this country working agreements and amalgamations have continuously reduced the number of companies. The Committee which reported to the Board of Trade in 1911 on the subject pointed out that the 110 separately operated railways or light

railways then existing consisted of more than 1,100 separately authorised undertakings. This Committee came to the conclusion that the natural lines of development of an improved and more economical railway system lay in the direction of more perfect co-operation between the various railway companies, but it recognised the necessity of safeguarding the public interest as competition was more and more completely eliminated.

### Railways and Ports

The process of developing working agreements by degrees might perhaps have been continued with advantage. The Great Northern, Great Central, and Great Eastern companies, and the North-Western and Midland companies, for instance, were drawing closer together, and a scheme for the amalgamation of the Lancashire and Yorkshire with the North-Western company had been prepared before the Railways Act was passed. The many details which call for adjustment in matters of this kind were gradually being dealt with. Further amalgamations might have been sanctioned. Instead, however, of proceeding step by step, Parliament in 1921 passed the Railways Act, promoted by the Ministry of Transport, one of the war departments.

The scheme of this measure is forcibly to combine the railways into four groups. The principal railway companies were scheduled as constituent companies to be amalgamated and the smaller concerns as subsidiary companies to be absorbed in the

respective groups. Amalgamation schemes were to be submitted before the beginning of 1923, and confirmed by the Tribunal constituted by the Act. The constituent companies are as follows. The Southern Group is composed of the London and South-Western, the Brighton, the South-Eastern, and the London, Chatham and Dover companies. The Western Group comprises the Great Western Railway, with the Barry, the Cambrian, the Cardiff, the Rhymney, the Taff Vale and the Alexandra (Newport) companies. In the North-Western, Midland and West Scottish Group are the London and North-Western, the Midland, the Lancashire and Yorkshire, the North Staffordshire, the Furness, the Caledonian, the Glasgow and South-Western, and the Highland companies. In the North-Eastern, Eastern, and East Scottish Group are the North-Eastern, Great Central, Great Eastern, Great Northern, Hull and Barnsley, North British, and Great North of Scotland companies.

Though the majority of the railways are comprised in the Act, the jointly owned lines are a notable omission from the scheme of the measure. Some of these are important. Reference has already been made, in the chapters on Liverpool and Manchester, to the fact that the system known as the Cheshire Lines was not scheduled to the Act. The joint owners (the Great Northern, Great Central, and Midland Companies) are now absorbed in the rival Eastern and North-Western Groups. There are other instances; for example, the Great Northern

and Midland joint line in the Eastern Counties, the Somerset and Dorset line, and others. The problem of what is to be done with the joint lines, in which many millions are invested, was shirked by the authors of the Railways Act and remains for solution.

The effect of the Railways Act in relation to ports and docks is to bring within the territory of the Southern Group the shipping centres of the south coast. These include the cross-Channel ports, Dover, Folkestone, and Newhaven, with Southampton and Poole. Farther west, at Weymouth and Plymouth, there is an overlap with the Western Group. The main coastal section allocated to that group is South Wales. Bristol, Newport, Cardiff (including Penarth and Barry), Port Talbot, Briton Ferry, Swansea, Llanelly, Milford and Fishguard are in its hands. Northward of these places is the area in which the North-Western Group is predominant. That group comes down into the western territory, having access to Bristol and Swansea, but its chief interest is in Manchester, Liverpool, and the ports between Liverpool and Glasgow, and in Glasgow itself. It touches the east coast by a line to Goole, and by running powers to Hull, as well as by its access to the Firth of Forth at Grangemouth. The Eastern Group dominates the whole of the eastern coast, its territory including Harwich, Ipswich, King's Lynn, Boston, Grimsby, Immingham, Hull, Middlesbrough, Hartlepool, Sunderland, Newcastle-upon-Tyne, Blyth, Leith, with the Fife coal

ports, Dundee and Aberdeen. The Eastern Group also has access to the west coast at Manchester, Liverpool, and Glasgow.

London, being the centre from which the lines of all the groups radiate, is not materially affected. Neither in the territorial aspect nor in that next examined are the shipping facilities of the metropolis much altered in consequence of the changes following from the passing of the Railways Act.

### Dock Ownership

Besides the question of territory there is that of dock ownership. As to this interest centres mainly in the changes resulting from grouping on the east coast and in South Wales. In other localities there will be no marked change. In the hands of the Southern Group Southampton will remain, as it has been, a port where the docks and quays are substantially controlled by a single railway company. In the north-west also there is little change from the dock point of view. At Garston on the Mersey and at Fleetwood and Barrow-in-Furness the docks are in railway hands, but at all the principal places in the north-west—at Manchester, Liverpool, Glasgow, and other ports—the docks and harbours are administered independently of the railways. In South Wales and on the north-east coast, on the contrary, the basis of working has undergone considerable modification.

Railway and dock development has gone hand in hand in South Wales, but, in the past, has pro-

ceeded definitely on a competitive basis. The coal-carrying lines associated with and in most instances owning the docks at the various points of shipment have been in competition with each other for traffic. Under the amalgamation scheme made public early in the year the docks at Newport, Cardiff (including Penarth and Barry), and Port Talbot have passed into the hands of the Great Western Railway Company. At Swansea a provisional agreement has been made under which the same railway company will take over the docks. Substantially, therefore, the group of South Wales coal-exporting docks pass into single railway control.

On the north-east coast the North-Eastern, the leading company of the Eastern Group, held a railway monopoly of its district, and also owned docks at the principal ports. A difference between the north-eastern and the South Wales coal ports should, however, be pointed out. In South Wales to control the docks is, in effect, to control the ports, but on the north-east coast this is not so. The physical conditions are different. Instead of a stretch of shore intersected by relatively insignificant rivers and fronting on a broad estuary—the Severn—subject to a great rise and fall of tide, there are large valleys opening on the North Sea. Instead of circumstances necessitating the use almost exclusively of closed docks, the conditions allow of shipment in part in the tidal waterways. On the Tyne the Dunston staiths and Tyne Dock

are railway property, but there are other docks and staiths on the river. On the Wear the docks are in independent hands. At Hartlepool they belong to the railway company. On the Tees the Middlesbrough Dock is North-Eastern, but here again much shipping frequents the river wharves. On the Humber the North-Eastern owned a riverside quay and all the older docks at Hull, and also (jointly with the Hull and Barnsley Railway Company) the King George Dock, but to the latter company belonged the Alexandra Dock and riverside quay. Above Hull, at Goole, the Lancashire and Yorkshire Railway Company, though not the owners of the docks, were largely interested. On the Humber estuary below Hull Immingham Dock and Grimsby were in the hands of the Great Central Railway Company.

Southward of this central section of the east coast the Great Northern and Great Eastern companies served the places of shipment, and at Harwich substantially controlled the port. In Scotland the North British Railway Company owned certain docks in addition to its lines, though the most important docks—those at Leith and Dundee—were not railway property.

Along the whole of the east coast the railways and such of the docks as were railway property now come into the hands of the Eastern Group. The expansion of monopoly powers is most marked on the Humber, where not only do Immingham and Grimsby cease to belong to a separate railway

company, but the competition at Hull between the docks of the North-Eastern and Hull and Barnsley companies is eliminated. No problem in connection with the Railways Bill led to such prolonged Parliamentary debate as this question of the Hull docks. All the commercial interests of Hull combined and worked assiduously to prevent the amalgamation of the Hull and Barnsley line and dock property with the Eastern Group, but the Bill was not in the result modified.

So the general scheme has gone through. Following the publication of the amalgamation proposals of the Western Group early in 1922 the detailed schemes of the North-Western, Eastern, and Southern Groups were issued. Subsidiary points have still to be adjusted, but the main questions have been settled, and it remains to watch the development in actual working of the combined undertakings which are to be known as the Southern Railway, the Great Western Railway, the London Midland and Scottish Railway, and the London and North-Eastern Railway.

# XIV.—THE BROADER VIEW

"AND what should they know of England who only England know?" Kipling's question is to the point in a study of our home ports. The broader view is essential to an understanding. Though this has not so far been pressed, it has not been forgotten. The introductory chapter gave some materials for comparisons, world conditions were touched upon in discussing coal and oil before leaving the South Wales ports, and there have been other references—for instance, the mention of the dependence of Hull on trade with Russia. Indeed, it would be difficult to study oversea trade without taking into account what is going on in countries other than our own. In the main, however, we have been concerned with home considerations, with questions of internal administration and of competition amongst our own ports. Though important, those questions do not involve such large issues as arise when one abandons the internal standpoint and looks at the ports from the outside. In that view the most pressing problem is that of the restoration of trade. Amidst much variety of circumstance there is one point of similarity which has uniformly presented itself. All the ports are still suffering from the effects of war. They have suffered in different ways and in varying degrees,

but they have all suffered. Some have recovered to a greater extent than others, but nowhere have the adverse effects of war upon trading conditions yet ceased to operate. Though determined and persistent efforts are being made to overcome the disastrous consequences of a successful war, we are still ploughing our way through a long and lugubrious chapter, and it is manifest that, until the process of reconstruction has embraced "all places that the eye of heaven visits" the gloomy chapter will not draw to a close. Our ports, dependent on international trade, are shadowed by the unhappy conditions of far off countries, and until world trade again flows freely our home ports cannot expect to re-establish themselves.

Changes in conditions of world trade resulting from the war fundamentally affect the future of our home ports. In concluding the chapter which dealt with London I ventured to suggest that, if the standing of our chief port is imperilled, it is not by the competition of provincial ports, but by possible results from the disturbance of the currents of world trade caused by the war. Although those results have not yet fully manifested themselves, recent developments to some extent indicate the direction of movement.

The relative power and importance of America have greatly increased. It was pointed out in the Rede Lecture for 1922 that: "When the opening and development of the Atlantic trade deprived the Mediterranean ports of their pride of place, an

Atlantic stage of world commerce began, in which England, an island with good harbours on its western coasts, was in the most favourable position. The Pacific stage which is now beginning must inevitably give the primacy to America. We had also a long start, industrially, over all our rivals, and our possession of great coal-fields and iron-fields close together gave us a still further advantage. Our labour was then cheap and good; our manufacturers capable and energetic. All these advantages are past or passing. Henceforth we shall have to compete with other nations on unprivileged conditions. It is useless to lament the inevitable, but it is foolish to shut our eyes to it."

An ostrich-like attitude towards circumstances which are disliked is too often adopted. Again and again references are made to London as the greatest port in the world in disregard of the fact that the foreign shipping tonnage figures of New York—they were given in the introductory chapter—which, before the war, slightly exceeded those of London, have since been very far ahead of London. Apparently the comparison can be made only on the foreign trade figures, as the returns of New York coasting trade are not officially issued. It is common knowledge, however, that New York, as well as London, has a very extensive coasting trade—the official definition is very comprehensive, including trade between the east and west coasts via Panama—and the foreign trade figures alone are not necessarily an unfair basis of comparison. They may,

indeed, favour London. This comparison, of course, does not definitely displace London from the premier position. There are factors to be taken into reckoning which are not reducible to figures, but it is surely a mistake persistently to ignore and avoid reference to comparative returns such as these, and to the real position of America in relation to world trade, especially in relation to the Pacific. America, with one hand on that ocean, and the other on the Atlantic, and with immense natural resources to draw upon—as we noted when discussing coal and oil—is better situated and circumstanced than this country in relation to the trade routes which may become of greatest importance.

The European nations, by wasting their substance in war, have hastened the westward movement of the vital centre. Their recovery is slow. America, though injured to some extent by participation in the conflict, suffered relatively little. The East was still less affected.

Without pursuing the complex economic problems which arise out of the conditions prevailing in the countries bordering on the Pacific, it is material to note that those conditions are factors in the future of the trade of our ports, along with the increased importance since the war of the United States of America.

There is, however, an apparent inconsistency between the two lines of activity being pursued by the United States. One of these is the development of world-wide maritime commerce; the other the

building of tariff walls. It is axiomatic that imports cannot be restricted by tariffs without at the same time limiting export trade, and it is difficult to see how the two policies can effectively be pursued together. It may be that America has not taken the tide at the flood.

After all (and indeed the manifesto issued by the bankers of the United Kingdom in 1921 said as much) trade—and international trade as much as any—is exchange, and no nation which lives by trading with others can prosper unless other nations prosper too. Neither America nor this country can limit imports without limiting export trade, and so striking a blow at world commerce on which they each, with other lands, to a very large extent depend for prosperity.

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